CrossTalk

November 2024

65 Years Of Service To Amateur Radio & Our Community

Issue 65 : 11

A 2024 Club Officers

President :	Jonathan Pearce, WB2MNF
Vice President :	Ronald Block, NR2B
Treasurer :	John O'Connell, K2QA
Recording Secretary :	John Zaruba Jr, K2ZA
Corresponding Secretary :	Michael Resnick, N2WOQ

Trustees - 4 Year Term

Carl Wittig, N2CRW	(2021-2024)
Charles Lanard, KD2EIB	(2022-2025)
Sheldon Parker, K2MEN	(2023-2026)
Len Rust, W2LJR	(2024-2027)

Directors - 3 Year Term

Jeffrey Garth, WB2ZBN	(2022-2024)	James Wright, N2GXJ	(2023-2025)
Frank Romeo, N3PUU	(2022-2024)	Al Arrison, KB2AYU	(2024-2026)
Chris Prioli, AD2CS	(2023-2025)	Bill Price, NJ2S	(2024-2026)

General Membership Meeting
Wednesday, November 6, 2024 @ 1900 Hours
In-Person & ZOOM : 943 0211 9674, 843147

Tech Saturday Forum
Saturday, November 9, 2024 @ 0900 Hours
W2MMD Clubhouse

Fox Hunt 31 : Fall Fox Hunt Fun
Saturday, November 9, 2024 @ 1130 Hours
W2MMD Clubhouse

GCARC TechNet ZOOM Forum
Every Monday @ 1930 Hours
ZOOM Meeting ID : 933 9943 3123, 800835

License Testing Session
Thursday, November 14, 2024 @ 1900 Hours
W2MMD Clubhouse

Board of Directors Meeting
Wednesday, November 20, 2024 @ 1900 Hours
W2MMD Clubhouse

Tuesday AfterNoon 2M Net @ 1200 Hours
Thursday Night 2M Net @ 2000 Hours

Tuesday & Thursday 10 Meter Net @ 1930 Hours
28.465 MHz or 28.475 MHz

Monday & Thursday Night 40M Net @ 1930 Hours
7.225 MHz (+/- 5 or 10 kHz)

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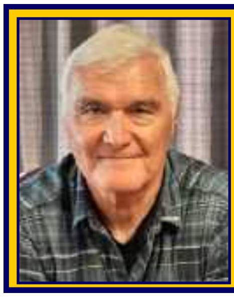

President's Letter
Jon Pearce, WB2MNF

November 2024

During October, Club activities were primarily focused in two areas - the preparation for the excavation and preparation of the VHF tower foundations and the continuing development and release of several high-altitude balloons carrying ham WSPR transmitters. I'm hopeful that there will be interest in both of these topics and am spending some additional space describing them below.

VHF Tower Excavation Project

As most members know the Club purchased two towers - one 72 feet and the other 89 feet - to hold VHF and UHF antennas in conjunction with the new transmitters, transverters, and amplifiers added several years ago. Several tower-related technical issues required mitigation over the last year, but were finally completed and the installation process for those towers could finally begin.

Planning

The installation process is complex and is defined in the tower specifications. A 5 foot square by 8 foot deep hole was required for each tower, into which a cage of reinforcing bar needed to be designed, constructed and lowered. Bolts to hold the tower needed to be placed in exactly the right location in the concrete. Everything needed to be constructed and assembled in accordance with the tower specifications, both to pass the township inspection and to assure overall safety of the installation.

Placing the tower foundations took significant planning. Locating them along a line between the existing HF and VHF towers would be most visually appealing but the position of all towers when tilted over needed to be considered. In addition, the 70 cm satellite antenna carves an arc that could hit one of the towers in certain locations. Finally, there was fear of hitting the water line running from the Clubhouse to another 4-H building, although nobody knew where that water line ran underground. All of that planning went into laying out the two 5 x 5 foot squares on the ground marking the area for the digging.

In addition to the published tower specifications, our own lightning protection specialist **Ron Block NR2B** designed additional requirements to protect the tower in case of a lightning strike. This necessitated additional connections to the reinforcing bars going to grounding rods outside of the tower holes, among other requirements. Finally, the dirt removed from the holes had to go somewhere! There's unevenness in areas of the Clubhouse grounds, so arrangements to move and spread the dirt were needed.

All of these specifications required significant planning, materials procurement, team coordination, equipment rental, and many other steps. **Frank Romeo N3PUU**, **John O'Connell K2QA**, and **Al Arrison KB2AYU** spent hours reviewing details, evaluating alternatives, and developing processes to make the initial excavation and installation successful. The big day was scheduled for Saturday, October 19, 2024 hoping for good weather and other favorable conditions for a large construction project.

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President's Letter - Continued from page 2

Implementation

Fortunately October 19th was a bright sunny day with moderate temperatures. Frank had arranged for the backhoe and skid steer to be delivered and a team of his professional friends had agreed to come down for the day and operate the equipment. Digging began and the skills of the professionals became immediately apparent as the backhoe driver played its controls with the dexterity of a concert pianist. Due to the lack of rain the ground was extremely hard, which was no match for the backhoe bucket and lent strength to the walls of the excavation.

The only real problem arose when the backhoe broke the water line and the hole started filling with water. Quickly Al drove to the pump house and discovered the water shutoff valve that stopped the water flow. **Chris Prioli AD2CS** promptly purchased the repair parts and Al had the water line fixed in about 20 minutes. The planned location of the hole was moved about 7 feet to the right and excavation began again with the dirt from the new hole filling in the old one.

Once the holes were dug and measured carefully using laser levels concrete blocks were placed at the bottom of the holes to support the re-bar cages. Those were also carefully leveled so that the cage would sit straight within the hole. Then the backhoe lifted the cage from straps that were wrapped around the vertical cage members and moved it over the hole and slowly lowered it into place. At that point the hole prep was nearly finished.

During the hole excavation the dirt was dumped into a trailer connected to Frank's truck that when full was driven in front of the Clubhouse and dumped in spots where the ground was uneven. One of the professionals driving the skid steer flattened it out creating a much better surface. Additional dirt was kept for filling in areas where the soil would settle after additional excavation for cable runs and other construction.

The final steps on Saturday were to drill holes in the dirt from outside the excavation through which lightning-protecting cables connecting the cages to external ground rods would run. **Al, Karl Frank W2KBF** and **Earl Moore KC2NCH** banged re-bar sections through the packed dirt to create these pathways. The holes were then covered with protective fence sections to avoid accidental injuries.

UPDATE : Since that date Frank, John and Al have assembled the concrete form frames and installed one of them on the eastern foundation base. The frames needed to be precisely squared to assure that the top of the concrete foundation would be square. The frames are mounted above the holes on 2x4s that are staked into the ground and carefully leveled. The forms to hold the tower mounting bolts are also ready to go and must be in place before the concrete is poured to assure a solid formation of concrete around them. Later the frame was installed on the western foundation.

In addition the ground cables of #2 copper wire were connected to the re-bar cages and routed underground to holes that were dug that will eventually contain a grounding rod. The tower bolts were mounted in a wooden frame to hold them in place for the concrete pour and were also connected by copper wire to the re-bar.

The tower team had also purchased several sections of dog kennel fencing to be used to keep unauthorized people away from the tower and that was erected around the open foundations of each of the towers and locked.

Finally, on Wednesday 10/30 with the framing completed the township inspector visited the site and signed off on the installation. Frank had arranged for the concrete trucks to arrive on Thursday, laying two truckloads of concrete into the holes. Serendipitously, Club member **Harry Eshleman KE2DQA**, who happens to have been an expert concrete worker earlier in life, showed up and was a tremendous help in getting the project completed professionally.

President's Letter - Continued on page 4

President's Letter - Continued from page 3

The tops of the concrete platforms were broomed to create a reasonable finish and the bolt positioning was given a final check. This completes the base project, and now we wait 30 days for the concrete to cure before mounting the bases and towers to the foundation. The tower team hopes to have lots of new aluminum up in the air for the January VHF contest.

Far too many Club members to mention were involved in this process, but we'll have pictures at the November 6, 2024 General Membership Meeting showing the work crews and many of the activities. Additional pictures are in this issue of CrossTalk.

Balloon Launches and Learnings

As most Club members know we've been working with the STEM club at the Woodruff Middle School whose primary project is to launch high-altitude radio-carrying balloons and learn about the technology underlying them. To gain experience in this process the "balloon team" composed of **Mike Thompson KG4JYA**, **Doug Dersch KD2VQA**, and myself have launched a number of these balloons but have yet to have one successfully remain aloft. While disappointing, this has also prompted some significant engineering work in identifying and solving the various issues causing these failures.

Initial Tests

The first two balloons launches were designed to fail - they were battery-powered and used balloons that we didn't believe would survive the pressure differential that occurs at altitude. Our goal in launching them was to understand the mechanics of building, inflating and releasing them, and then tracking them after launch. Being designed for failure, those were actually some of the more successful launches with one rising to 31,000 feet before starting descent and the other reaching 39,000 feet before the battery froze as expected. In that process we refined the building and balloon inflation process.

Finding The First Error

The next few flights were disappointing - the balloons didn't rise well and came down within a few hours after their launch. In reviewing the components of the balloon we realized that we had initially mis-measured the weight of the antenna and then reused that weight on several launches without checking it. That resulted in under-inflating the balloon which almost certainly caused it to fail.

We had time to correct that issue on the most recent flight and saw the balloon rise to a height of 20,000 feet before the sunlight on the horizontally-mounted solar cells fell to a level that didn't create enough voltage to run the telemetry tracker and WSPR transmitter. We only received three valid telemetry signals from that balloon on launch day and none since then, probably indicating that it had also popped somewhere over the western Atlantic Ocean. Since we're moving into winter the daylight hours are decreasing and sun angles are lower in the sky, especially at northern latitudes, so a horizontally-mounted solar cell will be less effective than it would have been in summer. The ZachTek tracker that we're using already has slanted solar panels and Mike has designed a similar structure for the Traquito tracker.

Finding The Second Error

Although we had corrected the weighting error we still believed that the balloons were failing at altitude, meaning that they were probably over-inflated. Since the balloons are inflated to lift the payload weight plus an additional ***"lift buoyancy"*** it seemed that our payload weights were still higher than those used by successful balloonists.

President's Letter - Continued on page 5

President's Letter - Continued from page 4

Some detailed online research revealed that that our antenna weight, at about 7.3 grams for a 20 meter dipole using the mil-spec Kevlar-coated silver wire donated by a Club member, was far higher than weights of other groups using plain enamel-coated magnet wire. In retrospect this was probably obvious but because of the excitement of using this special wire we didn't research it thoroughly. After cutting the same length antennas with 32 AWG and 34 AWG wire we found weights of 3.12 and 1.92 grams respectively, a savings of 4-5 grams in payload weight depending on the wire. We also evaluated 36 AWG wire that had an even greater weight savings but found that it was too fragile for our work at this point.

In retrospect it's probably easy to identify our errors throughout the process. The first was not re-checking each component of the payload weight when the balloons failed to rise. A favorite engineering aphorism is ***"When you're sure about everything and it still doesn't work, then one of the things you're sure about is wrong"*** - we knew it didn't work but didn't check our assumptions closely enough.

And the second error was letting our excitement at getting the special Kevlar-coated silver wire (which NOBODY else has unless they're building F-16s where this wire is used) keep us from checking to see if its weight made it impractical for use. Failures are frustrating but when they result in gaining knowledge they're closer to being acceptable.

UPDATE : The team launched a ZachTek balloon on Saturday October 26 using the 34 AWG wire and ended up with a payload weight of almost 10 grams less than the previous launch. Mike noted the psithurism (his million-dollar word for the sound of wind whistling through the trees) was high but the launch was successful and the balloon rose going south. No telemetry had been received as of the following morning, though. The team is evaluating the solar panels being used to see if they're providing enough continuous power for flight and is also evaluating launching a battery-powered balloon for a short-term high-altitude flight.

Next Steps

As of this writing we're planning to have the STEM kids complete four different balloon configurations at the next session with a possible launch date on the November 2nd weekend. We'll be using the 34 AWG wire for the antennas which will hopefully decrease the payload weight and require less inflation gas, allowing more room for expansion at altitude. Given these improvements we hope that these flights will be successful.

EME Operations

Last month we announced that the Foundation had ordered a 2.4 meter dish antenna that can be used for ***Earth-Moon-Earth (EME, or moonbounce)*** communications and had hoped to have it operational by the October EME context on the 19th. Two issues interfered - the first is that the dish is not yet available from the manufacturer, and the second is that the VHF tower excavation occurred on the weekend of the contest, so even if the dish had been available it's doubtful that it could have been made operational in time. The second weekend of the contest is November 16-17, 2024 and hopefully we'll be operational for that event.

Holiday Dinner

The details of the Holiday Dinner will be announced elsewhere in this issue, so hopefully we'll have the same turnout as last year's event, and I hope to see many of you there.

73 de Jon WB2MNF

Note : I added to this article over the week following the initial writing so some descriptions may appear disconnected. I'll have many pictures to show at the November 6th General Membership Meeting.

Holes dug and cages installed

Cages built & ready for installation

Cages installed

Building & installing the foundation frames

Cages & frames waiting for concrete

Concrete poured & foundations secured

Happy Holidays

2024 GCARC Holiday Dinner

Friday, December 6, 2024

Mantua Masonic Lodge
45 Mantua Boulevard
Mantua Township, NJ 08051

7:00 pm to 9:00 pm
Doors Open @ 6:00 pm

All Members, Their Families, And Friends
Are Welcome

$32.00 Per Person Check, or Cash
$34.00 Per Person PayPal or Credit Card
Use PayPal on the 2024 GCARC Holiday Dinner webpage, send in a check to the PO Box 370, Pitman, NJ 08071, or bring Cash, Check, Credit Card to any meeting, or any Clubhouse Saturday
Deadline To Pay Is Saturday, November 23, 2024

Fox Hunt 31 : Fall Fox Hunt Family Fun
Saturday, November 9, 2024
1130 to 1230 Hours

By Jim Wright, N2GXJ

Fall Fun For The Whole Family! No prior experience required. Meet at the W2MMD Clubhouse at 11:30am after the Tech Saturday Forum session on November 9, 2024 with your hand held 2 meter radio. Team up and check in with me in the parking area, so I'll have a list of those that will be hunting.

After everyone is checked in, I'll have some brief instructions, then the **Club's foxhunt transmitter** will be switched on at a nearby park by **Alex Duboski, KB2YEF (The Fox)**. Us hounds will then drive over together to try and find it.

The basic idea is that the closer you get to the transmitter, the stronger the signal. The first to find it has the privilege of hiding it for others to find next time. Those who find it will step away to allow others to keep hunting for it.

If anyone has not found it within an hour, we'll help talk them in to the finish, where we will pose for a post-hunt group photo, and share hunt stories together.

After the hunt, for anyone interested, there will be the option to head to Marino's to continue exchanging stories and get something to eat there.

Sound fun? It really is! Hope to see you there!

Transmitter Frequency : 146.565 MHz Simplex (3rd Harmonic 439.695 MHz)

FALL BACK
End of Daylight Saving Time
Turn clocks back one hour at 2 a.m.

Sunday, November 3, 2024 @ 0200 Hours

Welcome New Club Members :

James Bishop, an Associate Member from Williamstown, NJ.
Joseph DiCastelnuovo, KD2RPD, a General Class from Woodbury, NJ.
Michael Libonati, WA2ACV, an Advanced Class for Barnegat, NJ.
Ralph Verdi, KC2WVM, a General Class from Deptford, NJ.

We are glad to have you as members of the Club and hope to see you regularly at Club meetings, events, and activities. Hope to see you at the November 6th General Membership Meeting, either in-person or on ZOOM, the November 9th Tech Saturday Forum, and the Monday Night GCARC TechNet ZOOM Forum.

We also hope to ***"SEE"*** you on the ***"AIR"*** on the following nets :

- Sunday Night Skywarn 2 Meter Net @ 1930 Hours.
- Sunday Night ARES 2 Meter Net @ 2000 Hours.
- Tuesday AfterNoon 2 Meter Net @ 1200 Hours.
- Tuesday & Thursday Night 10 Meter Rag Chew Nets @ 1930 Hours on 28.465 or 28.475 MHz.
- Monday & Thursday Night 40 Meter Nets on 7.225 MHz (+/- 5 or 10 kHz) @ 1930 Hours.
- Thursday Night Rag Chew 2 Meter Net @ 2000 Hours.

All 2 Meter nets are on our 147.180 MHz (PL 131.8) repeater or on EchoLink W2MMD-R.

Tuesday & Thursday Nights 10M Rag Chew Net @ 1930 Hours
28.465 MHz or 28.475 MHz

> ***"Ask not what your Club can do for you,***
> ***Ask what you can do for your Club"***
> ***- KA2OSV***

ADIF Logs Wanted When Operating As W2MMD @ The Clubhouse

By Jim Wright, N2GXJ - Contact me via e-mail on Club Roster List

It is a common courtesy in ham radio to be able to QSL 2-way contacts made with other hams. We're pretty good about doing this for our field day contacts made each year, but are falling behind in this for contacts we make from the Clubhouse as W2MMD.

So here is the ask :

If you operate from the Clubhouse as W2MMD (e.g. on HF, UHF/VHF, or on Satellite, at Tech Saturday, or during contests or other), please email me the electronic log entries in ADIF format from the logger program you used for those contacts?

That way, just like I do following field day each year, I can get them uploaded to LOTW and to eQSL to offer the courtesy of an electronic QSL to those who make contact with us as W2MMD here in NJ.

Thank you

General Membership Meeting

Wednesday, November 6, 2024 @ 1900 Hours

Pfeiffer Community Center

Simulcast Live Via ZOOM : Meeting ID : 943 0211 9674; Passcode : 843147
Join ZOOM Meeting Link : https://bit.ly/44P4HCU

Go to : www.w2mmd.org to download the ZOOM log-on instructions PDF

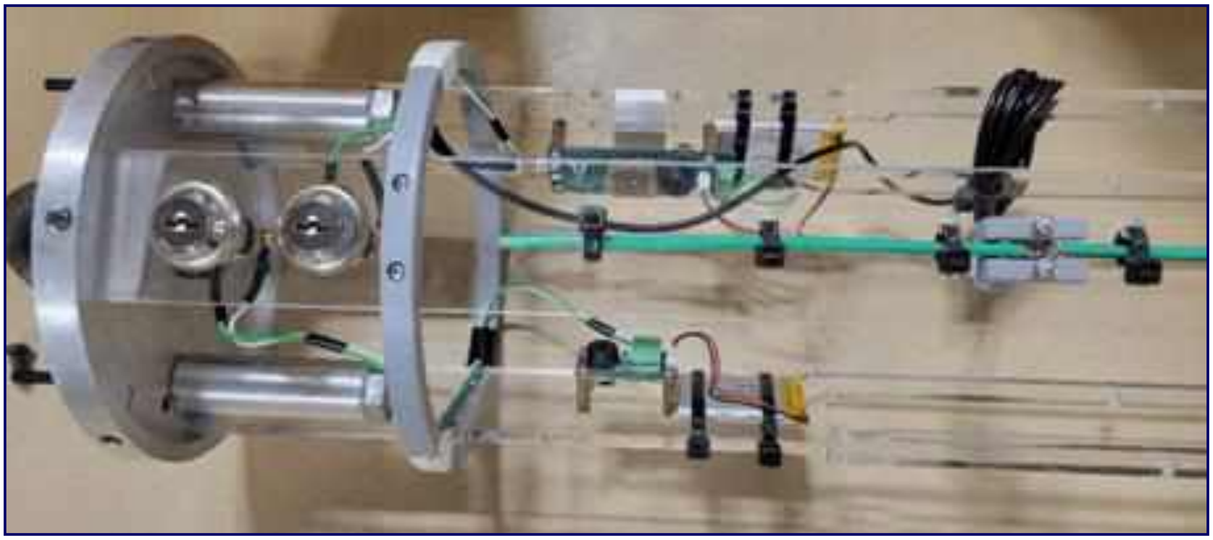
Rowan University Rocketry Project

Over the past year, the **Rowan University Rocketry Clinic** has developed and constructed a rocket for the Spaceport America competition held in Las Cruces, New Mexico. With radio communications help from GCARC, they were able to successfully deploy a telemetry system that tracked the rocket during flight and recovery. The team, consisting of Club members **Beth A Kraus, KE2BPE**, and **Holden J Correia-Fisher, KD2JPV**, plus several others, was able to successfully recover the rocket with no damage to the components or the body of the rocket. The Avionics Bay consisted of a **TeleMetrum v2.0 (upper in photo)**, which logs avionics status, altitude, acceleration, and GPS data, along with an **EasyMini v2.0 (lower)** that provides a failsafe redundant check on altitude. A signal from either the TeleMetrum or the EasyMini is designed to light a simple e-match to trigger the activation of the black powder explosive separation system and deploy the parachute.

The **TeleMega** transmits on the 70 cm HAM band at 434.550 MHz using a wire dipole antenna and communicates with the ground station using a 433 MHz three element Yagi antenna. The dipole antenna was chosen over a straight wire antenna with more traditional grounding radials because the dipole showed a lower reflected loss value on our Vector Network Analyzer.

Our most recent range test resulted in a reliable radio connection from about a mile and a half away even with obstructions. More testing and tweaking of our dipole design in the spring is expected to yield an even more reliable connection for future flights.

In this talk, Beth and her team will explain the design of the rocket, its Amateur Radio components, and an overview of the collected flight data. This should be a remarkably interesting program. See you there!



Here is the initial slate of candidates for the 2025 Club Officer Elections. Additional candidates can be nominated from the floor at the November 6th General Membership Meeting. Voting will take place at the December 4th General Membership Meeting.

- **President : Jonathan Pearce, WB2MNF**
- **Vice President : Ron Block, NR2B**
- **Treasurer : John O'Connell, K2QA**
- **Recording Secretary : John Zaruba Jr, K2ZA**
- **Corresponding Secretary : Michael Resnick, N2WOQ**

Vote For 2 :

- **Director : Jeffrey Garth, WB2ZBN**
- **Director : Frank Romeo, N3PUU**

Vote For 1 :

- **Trustee : Earl Moore, KC2NCH**

Gloucester County Amateur Radio Club
YouTube Channel
https://www.youtube.com/@W2MMD

GCARC TechNet ZOOM Forum

GCARC TechNet ZOOM Forum is scheduled to be available every Monday Night until December 30, 2024.

There will not necessarily be a topic scheduled every Monday Night, but the opportunity is available to schedule succeeding topics of interest on consecutive Monday Nights.

Every Monday @ 1930 Hours

Date &Forum Topic : See e-mail and website for more information

Go to : https://gloucestercountyarc.weebly.com/gcarc-technet.html
for TechNet Information Resources and ZOOM Instructions

Meeting ID : 933 9943 3123 ; Passcode : 800835
Join ZOOM Meeting Link : https://bit.ly/3K8bWwj

Tech Saturday Forum

November 9, 2024 @ 0900 Hours

W2MMD Clubhouse

Forum Topic : Satellite Operating

Q & A Session About All Things Ham Radio and Socializing!

The HF Station Will Be Available For Local Operation!

Tech Saturday sessions are held at the W2MMD Clubhouse on the first Saturday of the month following the Wednesday Night General Membership Meeting and are designed to be hands-on collaborative events focused on using the Clubhouse resources to demonstrate various aspects of Amateur Radio and related technical areas. Previous sessions have covered USB software-defined radios, Raspberry Pi and Arduino devices, satellite operations and other similar topics.

We would like to invite all of our new members as well as our veteran members to our Tech Saturday Forums to help answer any questions and discuss any and all issues the new members have come across as they progress through the ***Amateur Radio Experience*.**

The Discussion Theme is a QSO starting point - a way to initiate a conversation. All Tech Saturdays are an open QSO of all subjects of Amateur Radio interest. All questions are welcome as well as a venue for hams to show off their latest ham radio projects or gadgets. Have a problem programming that HT, we can help! Not sure what radio or antenna to buy, we can help!

All Club Members who would like Clubhouse access to use its radio equipment would have to have some brief “Elmering” on the Clubhouse rules, such as using the alarm system, the A/C and heaters, the antenna system, and the radio equipment. The Club’s HF station is reserved for local use on Tech Saturday.

All are welcome - Hams and Non-Hams - Club Members and Non-Club Members.

Sunday, November 10, 2024

GCARC Monthly VE Exam Testing Summary - October 2024

Gary Reed, N2QEE, Reports, There were two VE sessions in the month of October, our regular monthly session and a additional one for a Buena Boro EMA class.

The October 10, 2024 session had one candidate for Technician, but wasn't successful.

The participating VE's were :

- **Rich W2RHS**
- **Mike KG4JYA**
- **Jerry K2EAB**
- **Mary Lu K3MLC**
- **Greg W5DO**
- **Earl KC2NCH**
- **Steve W2SEF**
- **Chris AD2CS**
- **Mike N2WOQ**
- **Court KD2SPJ**
- **Gary N2QEE**

The second session was held on October 17, 2024 for Buena Boro EMA with six candidates for Technician. Two candidates were successful - a father and adult son.

- **Peter B Elias KE2EGL of Newport**
- **Peter L Elias KE2EGU of Vineland**

The one license was posted on Saturday the 19th and the other was awaiting payment.

The participating VE's were :

- **Rich W2RHS**
- **Steve W2SEF**
- **Jerry K2EAB**
- **Earl KC2NCH**
- **Mike N2WOQ**
- **Chris AD2CS**
- **Gary N2QEE**

The next monthly VE session will be held on November 14, 2024 at the W2MMD Clubhouse. A big thank you to the participating VE's for both sessions.

Need a ride to a Club meeting, event, or activity?

Just send a message to the Club's e-mail reflector asking if a member can pick you up

GCARC <*at*> MAILMAN <*dot*> QTH <*dot*> NET

All Club members have access to this FREE e-mail service

DAs and DITs

>> **Scott Dantis, AA2SD, Reports,** Dear fellow Club members and operators, let's work each other during the January 2025 VHF Contest. Sign up to receive (1) short message when I reach my grid during the contest. Please click on the link below if you would like to subscribe for this notification during the January VHF Contest 2025 : **https://eztxt.net/2jYm9L**

In order to provide a quick update strictly for VHF Contest use only, I have established a one time text message notification of my updated grid locations. You will only receive one short text from me once I am operational at a new grid during the contest period only. This is not a group text program, you will only receive one text from me at each location, you can also opt out from all messages. Contest details : **http://www.arrl.org/January-vhf**

Privacy Policy : No mobile information will be shared with third parties/affiliates for marketing/promotional purposes.

Thanks : https://www.aa2sd.com "Get Out in a Park and Activate Today"

>> Congratulations to **Greg Ciraula, K3GC**, (ex. W5DO) for his new vanity callsign.

Gloucester County Amateur Radio Club Elmers

We are still looking for some more Club Elmers. If you would to add your name to the Elmer's List, send your specialty to w2mmdgcarc@gmail.com. Here is what we have so far :

- **Tony Starr, K3TS : Antenna Construction; Contesting; CW Help and Training**
- **Ken Bozarth, KN2U : Antennas**
- **Jeff Welsh, KD2AZI : Boat Anchor Repair & Operation; Raspberry Pi; Arduino; Python; POTA; Mobile Installation & Operating**
- **Karl Frank, W2KBF : Digital Messaging (FLDIGI, WinLink)**
- **Lenny Rust, W2LJR : DMR Radios & Programming**
- **Ron Block, NR2B : Lightning protection & grounding**
- **Chris Prioli, AD2CS : Kit Building; Antenna Building; Radio Programming; PC and Electronic Troubleshooting; ham radio licensing & studying**
- **John Zaruba Jr, K2ZA : Yaesu System Fusion Radio Programming, POTA, SOTA**
- **Jerry Barnish, K2EAB : Radio Astronomy**
- **Mike Thompson, KG4JYA : Radio Astronomy; VARA (HF and FM); WinLink**
- **Steve Farney, W2SEF : WSJT-X; FT-8; LoTW; TQSL; Grid Square**
- **Carl Wittig, N2CRW : Audacity® Audio Editor**
- **Gary Mirkin, WA3SVW : FLDIGI; MMSSTV**
- **Jon Pearce, WB2MNF : Satellite Communications**
- **Frank Romeo, N3PUU : Toilet Installer; Jack-Of-All Trades - Master Of None**
- **John Hill, W2HUV : Local & Remote W2MMD HF Station Operation, Training & Support**
- **Dave Sheppard, W2PAX : National Traffic System**

The Education Connection

By Chris Prioli, AD2CS - chris@ad2cs.com
www.ad2cs.com

November 2024

As turkey time and the winter holidays rapidly approach, I would like to suggest that anyone who does not already own a NanoVNA should put one on his/her Gift List of items most sought after as holiday gifts this year.

As I mentioned in last month's column, I am getting ready to put on another NanoVNA class. This class will be offered at some point shortly after the conclusion of the current Ham Exam Preparation Class session, which wraps up the week of 11 November. I would like to run the NanoVNA class early in December. I am aiming for a pair of three-hour classes (with a break at the mid-point), on each of two separate evenings, for a total of six hours of study and training.

Naturally, I am looking for a count of individuals - Club members or not - who may be interested in signing up for this program. My plan is as follows :

Meeting 1 : Tuesday, December 3, 2024 @ 1800 Hours

- **Basic familiarization with the NanoVNA**
    - ◊ **Exploring the menu system**
    - ◊ **Understanding how to navigate the NanoVNA**
    - ◊ **Understanding the NanoVNA features and capabilities**
- **Updating NanoVNA firmware**
- **Calibration of the NanoVNA**
    - ◊ **How to make custom calibration standards**
    - ◊ **Understanding the need for and methods of calibrating the unit**

Meeting 2 : Thursday, December 5, 2024 @ 1800 Hours

- **Antenna system analysis with the NanoVNA**
- **Feedline analysis with the NanoVNA**
- **Capturing and using screenshots from the NanoVNA**
- **PC interface for the NanoVNA**
- **Exploring various NanoVNA operational modes**
- **Comparing the NanoVNA to a Rig Expert antenna analyzer**

My intent is to hold the class cost to a simple $15 fee per attendee, which will be applied to defraying the Club's expenses that will be incurred as a result of hosting this program.

Each attendee must have a NanoVNA for personal use in this class. While the specific make and model do not matter very much, the class will in all likelihood run more smoothly if we all have the same type of instrument. The preferred model is the NanoVNA H4, which is readily available through Amazon. The current price is right around a hundred dollars. Just make sure that the model that you purchase includes a micro-SD card slot. To go along with that slot, each attendee will also need bring a 32GB microSD card to class, as we will be using the card slots during the program. Finally, each attendee will want to bring a notebook and something with which to write.

Education Connection - Continued on page 17

Education Connection - Continued from page 16

If this class is for you, take a few minutes and drop me an email so that I can get your name on the class roster and hold your seat. My targeted class size is about a dozen students, and this one may fill up quickly. Don't wait too long and miss out because of that wait!

The tentative dates for this class, as of this writing, are Tuesday, 3 December 2024 and Thursday, 5 December 2024.

That's it for now…see you next month!

NanoVNA Exploration Class
W2MMD Clubhouse

Meeting 1 : Tuesday, December 3, 2024
Meeting 2 : Thursday, December 5, 2024
1800 to 2100 Hours
Class Fee : $15.00
Please make your PayPal payment to
EDUCATION @ W2MMD.ORG
You can also pay at the November & December General Membership Meetings
or at any Saturday @ The Clubhouse

More Information at :
https://gloucestercountyarc.weebly.com/nanovna-exploration.html

W2MMD

www.facebook.com/W2MMD

twitter.com/w2mmd_gcarc

Facebook

Tuesday AfterNoon Net @ 1200 Hours

Net Control Stations :

Steve Farney, W2SEF; Rich Subers, W2RHS,
Greg Ciraula, K3GC; & Jeff Garth, WB2ZBN

Greg Ciraula, K3GC : November 5, 2024
Steve Farney, W2SEF : November 12, 2024
Rich Subers, W2RHS : November 19, 2024
Jeff Garth, WB2ZBN : November 26, 2024

Greg Ciraula, K3GC : December 3, 2024
Steve Farney, W2SEF : December 10, 2024
Rich Subers, W2RHS : December 17, 2024
Christmas Eve : December 24, 2024
New Year's Eve : December 31, 2024

147.180 MHz (+) (131.8) Repeater & EchoLink W2MMD-R

If you would like to be a Net Control Station for this net, please contact Steve Farney, W2SEF

Thursday Night Rag Chew Net @ 2000 Hours

Net Control Stations :
Mary Delemarre, W2TDS; Gary Mirkin, WA3SVW;
Steve Farney, W2SEF; & Jeff Garth, WB2ZBN

147.180 MHz (+) (131.8) Repeater & EchoLink W2MMD-R

Here is the schedule for the upcoming weeks :

Steve Farney, W2SEF : November 7, 2024
Mary Delemarre, W2TDS : November 14, 2024
Gary Mirkin, WA3SVW : November 21, 2024
Happy Thanksgiving : November 28, 2024

Jeff Garth, WB2ZBN : December 5, 2024
Mary Delemarre, W2TDS : December 12, 2024
Gary Mirkin, WA3SVW: December 19, 2024
Steve Farney, W2SEF : December 26, 2024

If you would like to be a Net Control Station for this net, please contact Jeff Garth, WB2ZBN

Gloucester County Skywarn Net

The Gloucester County Skywarn Net is held every Sunday @ 1930 Hours on the 147.180 MHz (+) (131.8) Repeater & EchoLink W2MMD-R

All Are Welcome To Participate

Net Control Stations : Steve Bromhead KB2RTZ, Charlie Wahl, KC2STO, & Jeff Garth WB2ZBN

Gloucester County ARES Net

The Gloucester County ARES Net is held every Sunday @ 2000 Hours on the 147.180 MHz (+) (131.8) Repeater & EchoLink W2MMD-R

All are welcome to participate

Net Control Stations :
Steve Farney W2SEF, Bob Keogh KD2NEC, Karl Frank W2KBF, Al Arrison KB2AYU, Gary Mirkin WA3SVW, Greg Ciraula, K3GC & Todd Woodward KD2ESH

Steve Farney, W2SEF : November 3, 2024
Karl Frank W2KBF : November 10, 2024
Al Arrison KB2AYU : November 17, 2024
Greg Ciraula, K3GC : November 24, 2024
Gary Mirkin WA3SVW : December 1, 2024
Todd Woodward KD2ESH : December 8, 2024
Bob Keogh KD2NEC : December 15, 2024
Karl Frank W2KBF : December 22, 2024
Steve Farney, W2SEF : December 29, 2024

Anyone who is interested in joining the Gloucester County ARES Team, is invited to contact Bob Keogh at KD2NEC @ QSL.NET

ARRL Learning Center
https://learn.arrl.org

Discover how to make Amateur Radio your own.

Online courses from the ARRL Learning Center provide ARRL members with additional instruction and training for getting on the air, emergency communications, and electronics and technology

Current Website Updates : Go to this page to find out the latest changes & updates on our W2MMD Website

https://gloucestercountyarc.weebly.com/current-website-updates.html

At The Repair Bench…

A monthly column describing a recent repair bench event.

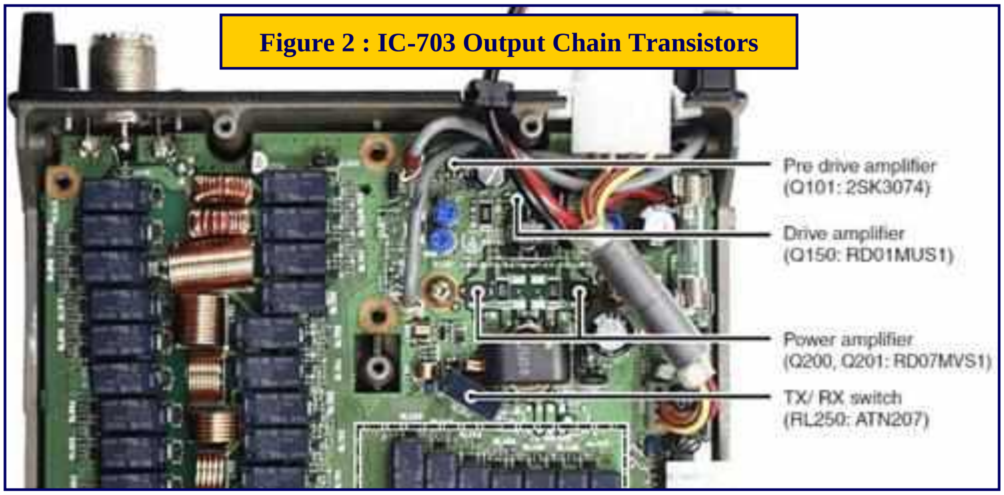
By Chris Prioli, AD2CS - chris@ad2cs.com - www.ad2cs.com

Icom IC-703 Transceiver - November 2024

Once in a while, a job will come in that is simple and straightforward, but is still a pain in the behind to complete. This is one of those situations. In this case, the job is the replacement of the output transistors in an **Icom IC-703 QRP Transceiver**. This unit came to me with a diagnosis report from an authorized Icom repair facility. The owner had, at the time that the radio was evaluated, not wanted to spend the money that the repair facility quoted to repair the radio. Now, five years later, the radio ends up on my bench because the owner decided to go ahead and have the repairs made.

According to the Bench Report from the Icom facility, transistors Q200 and Q201, the power amplifier transistors, had failed and were in need of replacement. The repair quote that was provided to me with the radio showed an estimated $457 repair cost to the owner, and as I said earlier, that was five years ago. I believed that I could and would do better than that on the price, and I told the owner so.

Figure 2 : IC-703 Output Chain Transistors



The Icom repair facility had done the heavy lifting as far as diagnosis was concerned. While it is not my policy to blindly accept such findings, I also consider the source. Then, I attempt to duplicate or verify the diagnosis. In this case, I was able to readily verify that the power amplifier transistors had both failed. This took a minimum of time, but I considered it to be a necessary investment, as I did not want to replace these parts blindly and then find that something else was really wrong with the radio.

The transmit signal was present at healthy levels through the pre-driver Q101, a ***2SK3074***, and the driver Q150, an ***RD01MUS1*** type, both of which are N-channel power MOSFETS. The signal, however, was lost through the power amplifier transistors. This was a simple matter of tracing the signal through the radio using an oscilloscope.

The biggest problem was actually in sourcing the transistors. These transistors, commonly referred to as “final” or “output” transistors, are in fact the last stage of RF amplification before the output RF signal is directed to the antenna for transmission. They are ***RD07MVS1*** devices, and are N-channel enhancement-mode power MOSFETS made by Mitsubishi. The only sources of these transistors appeared to be in China, and there was therefore, as always, the question of whether or not the received parts would be genuine parts or counterfeits.

At The Repair Bench - Continued on page 21

At The Repair Bench - Continued from page 20

I decided to purchase the transistors from a vendor that I have dealt with in the past. **Jotrin Inc. (https://www.jotrin.com)** is a supplier of surplus electronics parts to the repair industry, and I have always obtained viable parts from them in the past. I put in my request to my representative there and waited for a reply.

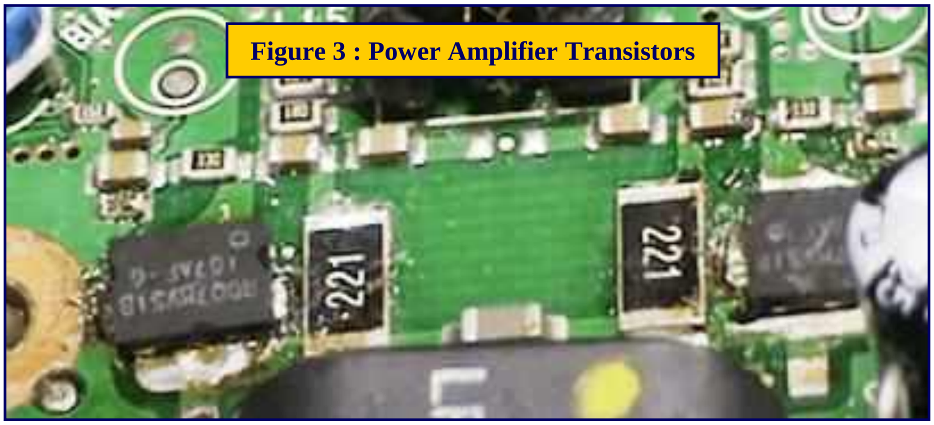


Figure 3 : Power Amplifier Transistors

Eventually, three weeks later, she sent me an email saying that they had located the parts, but that the price would be considerably higher than originally anticipated. I discussed the situation with the owner of the radio, and we made the decision to go ahead and order the transistors.

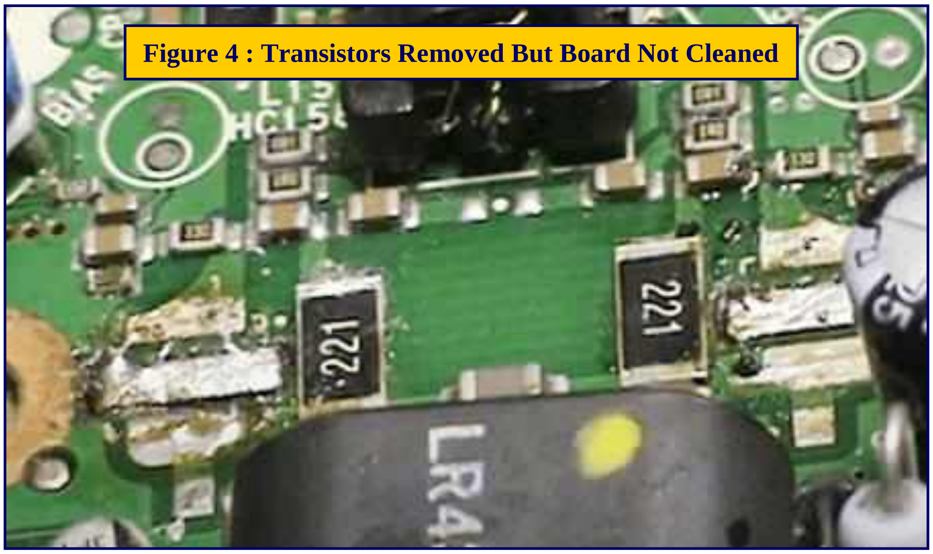


Figure 4 : Transistors Removed But Board Not Cleaned

Another month went by before the package containing the transistors showed up in my mailbox. Imagine my surprise when the package turned out not to contain two transistors, but to contain twenty of the little buggers. Now I know why the cost was so high. Somehow, we got our wires crossed as to quantity, I thought. I reached out to Elle at Jotrin and found that she was aware of the quantity difference, and that the quantity shipped was the minimum purchase from the source from which she had obtained the parts.

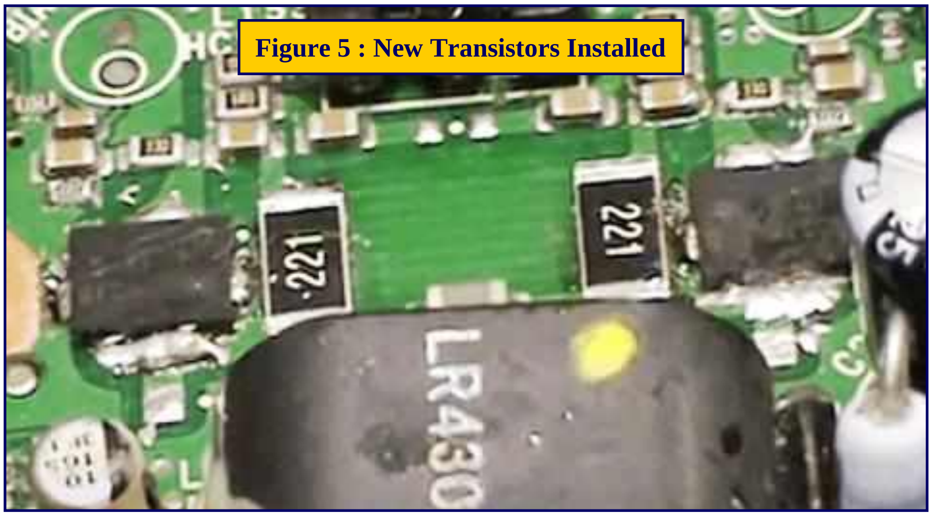


Figure 5 : New Transistors Installed

OK - so I now had eighteen spare transistors to fit the Icom IC-703 radios, and I could also extend a lower price to my customer. All that I had to do now was to replace the transistors and test and align the radio.

Replacement of the transistors involved the use of focused hot air to de-solder the original transistors. I then used some solder wick to clean up the excess solder on the traces on the board, and cleaned the area afterwards with some 99.9% IPA. The board was now ready for the installation of the new transistors.

I applied some low-temperature ***CHIPQUICK***® paste solder to the pads, and then applied plenty of liquid flux to the area, working with one of the transistor locations at a time. After positioning the transistor on the pads, I applied heat via the focused hot air again. This caused the solder to flow and to bond the transistor to the board.

At The Repair Bench - Continued on page 22

At The Repair Bench - Continued from page 21

I repeated the process with the second transistor, and then cleaned up the excess flux with the IPA after the board had cooled.

Testing of the radio with a Bird 43 directional wattmeter into a dummy load showed that the output power was right where it should be, peaking at about 9.8 watts in CW mode, and easily reaching 9.5 watts in USB with a continuous 10kHz moderately loud audio tone into the microphone.

I spent some time going through a full alignment of the radio, but it really was very close to correct alignment to begin with. I made some very minor adjustments, but as I said, it was just about right to start with.

I did notice that the cone of the speaker in the radio was cracked in two spots. After some discussion with the radio owner, I made a repair to the speaker cone mostly to prevent further cracking of the cone. Such repairs are easily made with rubber cement brushed lightly onto both sides of the cone material over the cracks. A light coating of the rubber cement will remain pliable enough so as to not hinder movement of the cone as the speaker operates, but will hold the paper edges together nicely and prevent rattling. I extended the coat of cement around the cone in line with the cracks, as that was where the stress on the cone had been. I was not too concerned with the speaker performance either way, as the owner stated that his intent was to use an external speaker or headphones with the radio. He did not want to spend the money for a replacement speaker, though it would not have been very expensive.

This was one of those repairs that did not call for any real diagnosis - that part of the job had already been done by a reputable vendor. My policy in a case like that is to accept, but verify, which I did. In the long run, this was simply a mechanical repair, with no real brain work required, but nonetheless, it made sense to investigate all aspects of the problem.

The radio was returned to its owner, who was happy to have it back on the air after many years of sitting in a box in his basement. I enjoyed the repair, and ended up with eighteen spare transistors for this type of radio. All in all, not a bad job.

See You Next Month!

Regional (Atlantic & Hudson Divisions) Hamfests & Events

November 10, 2024 : Long Island Mobile Amateur Radio Club, Hamfest & Electronics Show, Levittown Hall, 201 Levittown Parkway, Hicksville, NY. **www.limarc.org**

November 24, 2024 : Fair Lawn Amateur Radio Club, The Great FLARC Auction, Fair Lawn Senior Center, 11-05 Gardiner Road, Fair Lawn, NJ. **www.fairlawnarc.org**

Operating Tip

After submitting your contest log, it's a good idea to check the event's "logs received" page to make sure that your log has been accepted. Most contest sponsors will send a confirmation email when submitting a log electronically- its a good idea to retain those for future reference. When the contest's "raw scores" are posted, you can also verify that your log was submitted in the correct category.

Club Member	DMR ID
W2MMD Clubhouse	**3198604**
Michael Andrescavage, N2ICV	3134044
Lance Appel, KE2UC	3200487
Alex Calabrese, WA2ADS	3100583
Chuck Capasso, WB2PGE	3169781
Matthew Carango, N3QB	3169432
Todd Cecilio, KA2YNT	3169458
Anthony Cerami, N2OAC	3202759
Mark Clark, N3QMJ	3102110
Holden Correia-Fisher, KD2JPV	3104911
Mike Covaleski, N2MMC	3134855
Walter Coward, WX2E	3166863
Bob Demola, KD2GFL	3134319
Doug Dersch, KD2VQA	3193630
Thomas Distelcamp Sr, KC2GYC	3110869
Glenn Dougherty, N2YIO	3161836
Adam Duncan, W3DUN	3202691
Herb Dyer, KT2Y	3134907
Harry Elwell, AD5TT	3128498
James Foster, W3JNF	3142117
Karl Frank, W2KBF	3146716
Glen Guenther, KE2BUO	3202079
Melissa Guenther, KE2BWZ	3202496

Club Member	DMR ID
Deirdre Anne Hebert, AD2GQ (AB1ST)	3133330
Gary Mirkin, WA3SVW	3165494
John Murrow, KD2NHK	1134122
Phil Nunzio, WA3RGY	3134336
John O'Connell, K2QA	3110610
Robert Pantazes, W2ARP	3157208
Jonathan Pearce, WB2MNF	3163415
Michael Pecorini, K2MRP	3132996
Michael Pentimall, KC3VTF	3203601
John Price III, KD2QYC	3123583
Chris Prioli, AD2CS	3195449
Michael Resnick, N2WOQ	1134013
Len Rust III, W2LJR	3186225
Len Rust IV, K2LJR	3196243
Dave Sheppard, W2PAX	3112666
Cory Sickles, WA3UVV	1142052
James Simeone, KC2AOF	3134848
Court Smith, KD2SPJ	3186243
Jackson Snyder, AI2D	3164371
Rich Subers, W2RHS	3204316
Brett Waller, K2BKW (KC2UXQ)	3134261
Bill Wood, KD2OSJ	3197459
John Zaruba Jr, K2ZA	3134331

For more information, DMR links, and W2LJR's DMR presentations, go to :
https://gloucestercountyarc.weebly.com/dmr.html

CrossTalk Submissions

This is your Club Magazine. Make use of it.

If you have stories or photos of your hobby that you would like to share with the Club, please do so!

We will keep covering all of the GCARC events, but it is also nice to get those personal perspectives to include in every issue. Connecting through experiences is what makes the Gloucester County Amateur Radio Club a *REAL* Club.

All submissions, queries, comments, and editorials should be addressed to :
Jeff Garth, WB2ZBN at djgrath1 <*at*> gmail <*dot*> com

Submission deadline for the December 2024 issue : Wednesday, November 20, 2024

Club Website www.w2mmd.org
Club E-Mail Reflector : GCARC <*at*> Mailman <*dot*> QTH <*dot*> Net

DMR Configuration Sequence

1. Obtain and Configure DMR ID :
    - https://www.radioid.net
2. Download Contact List :
    - http://www.dmrcontacts.com
3. Identify Repeater or Hotspot :
    - https://www.repeaterbook.com
4. Define Talk Groups
    - Numerical ID
    - Text Name

https://brandmeister.network/?page=talkgroups

5. Create Channel
    - Select Number
    - Assign Name
    - Select DMR ID
    - Assign Frequency
        - ♦ Transmit
        - ♦ Receive
        - ♦ Bandwidth
        - ♦ Power
        - ♦ DMR Mode (Simplex/Repeater)
        - ♦ TX Permit (Channel Free)
    - Assign Talk Group
    - Assign Color Code
        - ♦ Agreed Upon with Other Users
    - Assign Time Slot
    - Agreed Upon with Other Users

6. Create Zone

7. Add Channels to Zones

8. Configure Features

9. Upload Code Plug

10. Upload Contact List

If you recently changed your callsign, contact idteam@dmr-marc.net to have your DMR ID transferred to your new callsign.

ARES Resources (Updated as of November 2024)

ARRL ARES Registration Form : https://bit.ly/3Ae2pCf
Download the ARES Manual [PDF] : https://bit.ly/3iUhJLQ
ARES Field Resources Manual [PDF] : https://bit.ly/3QT4PtY
ARES Standardized Training Plan Task Book July 2024 Ver. 3.0 [Fillable PDF] : https://bit.ly/4dToEes
ARES Standardized Training Plan Task Book July 2024 [Word] : https://bit.ly/4heLXSU
ARRL ARES Plan July 2024 : https://bit.ly/3Uf8gyf
ARES Group Registration : http://bit.ly/3XodGpX
ARRL Emergency Communications Training : http://bit.ly/3J2gMMf
FEMA 2023 National Preparedness Report : https://bit.ly/3YrPWnY
Southern New Jersey Section Emergency Operations Plan 2023.PDF : https://bit.ly/3YqMdHb

The Amateur Radio Emergency Service® (ARES) consists of licensed amateurs who have voluntarily registered their qualifications and equipment, with their local ARES leadership, for communications duty in the public service when disaster strikes. Every licensed amateur, regardless of membership in ARRL or any other local or national organization is eligible to apply for membership in ARES. Training may be required or desired to participate fully in ARES. Please inquire at the local level for specific information. Because ARES is an amateur radio program, only licensed radio amateurs are eligible for membership. The possession of emergency-powered equipment is desirable but is not a requirement for membership.

If you are interested in learning more about the Gloucester County ARES Program or becoming an ARES member, please contact Bob Keogh (KD2NEC@QSL.NET)

Show Us Your Shack!

W2ARP Ham Shack

By Bob Pantazes, W2ARP

When we were looking for a home in the Greensboro, NC area, we found a home that met our needs.

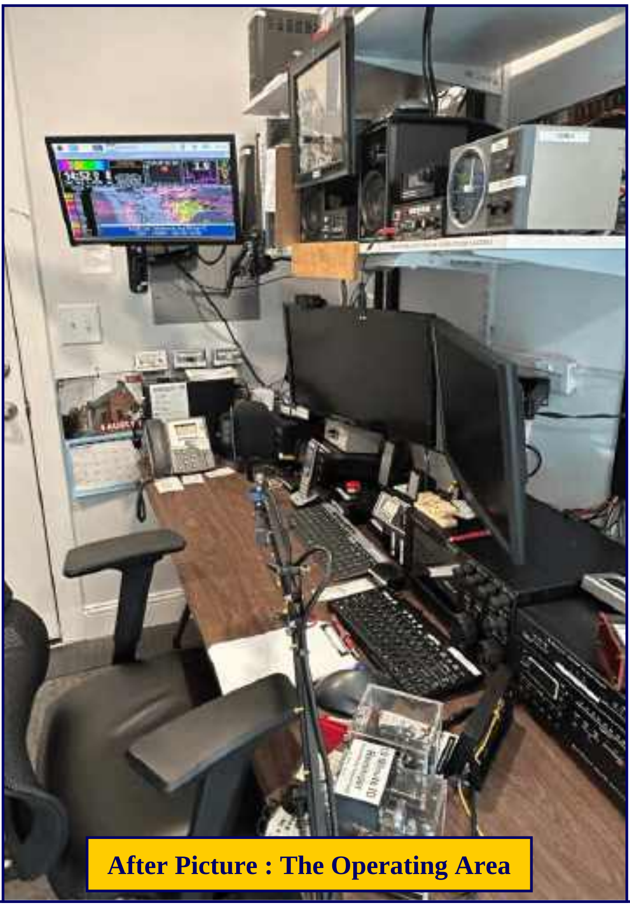
The bonus was a room attached to the carport. The room is 8 feet by 18 feet. It was unfinished, filled with a broken workbench, a couple of old filing cabinets, lots of unneeded stuff and rodents. We cleaned out the room and worked with a contractor to run 60 amp electrical service, lighting, outlets, insulate, wallboard, a new window, door and paint the room.

I installed a 9 foot roof tower with a 10 foot pole to hold a VHQ HEX beam, with an End Feed dual band wire antenna on 30 and 60 meters. For 40 and 80 meters I use a doublet dipole configured as an inverted “V” in a tree.

The rigs are a Flex 6400M feeding an Elecraft KPA500 amp into a KAT500 tuner. There is a Yaesu FT-991A for backup and 2 meter and 70 CM.

Welcome To The Home Of W2ARP

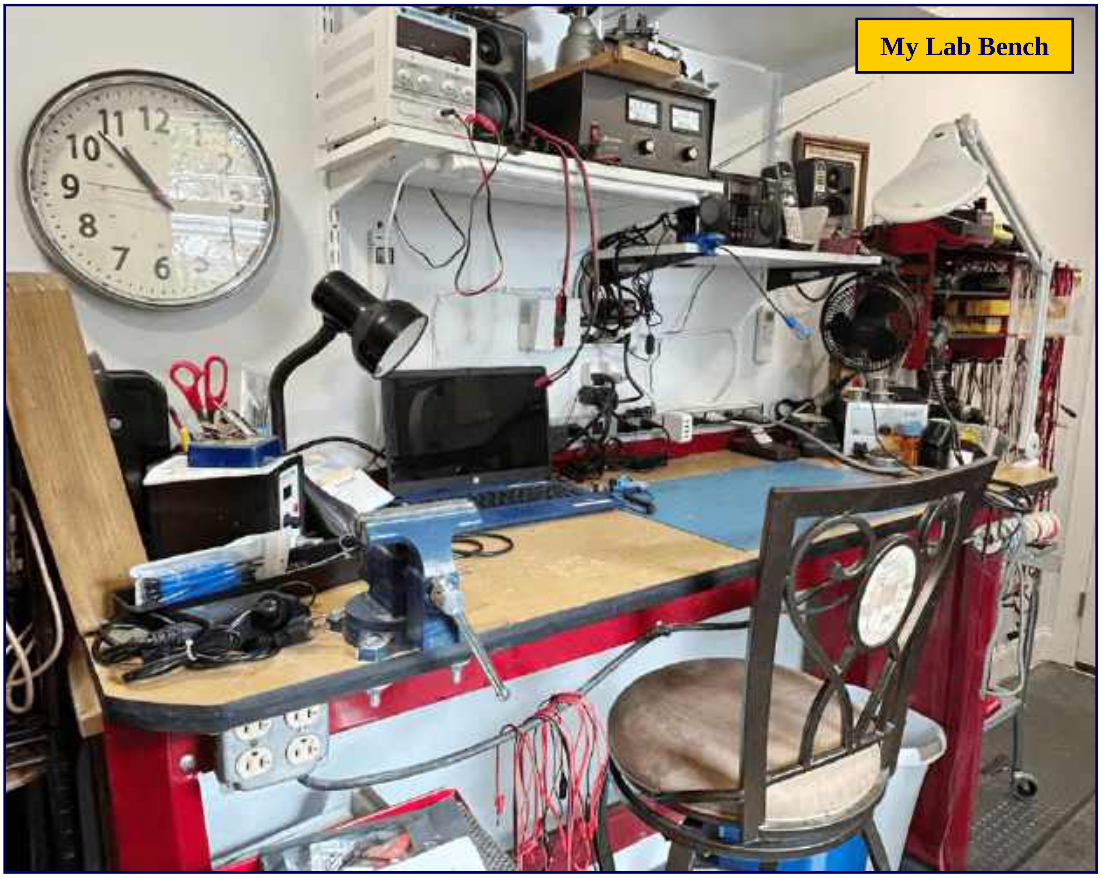
Before Picture



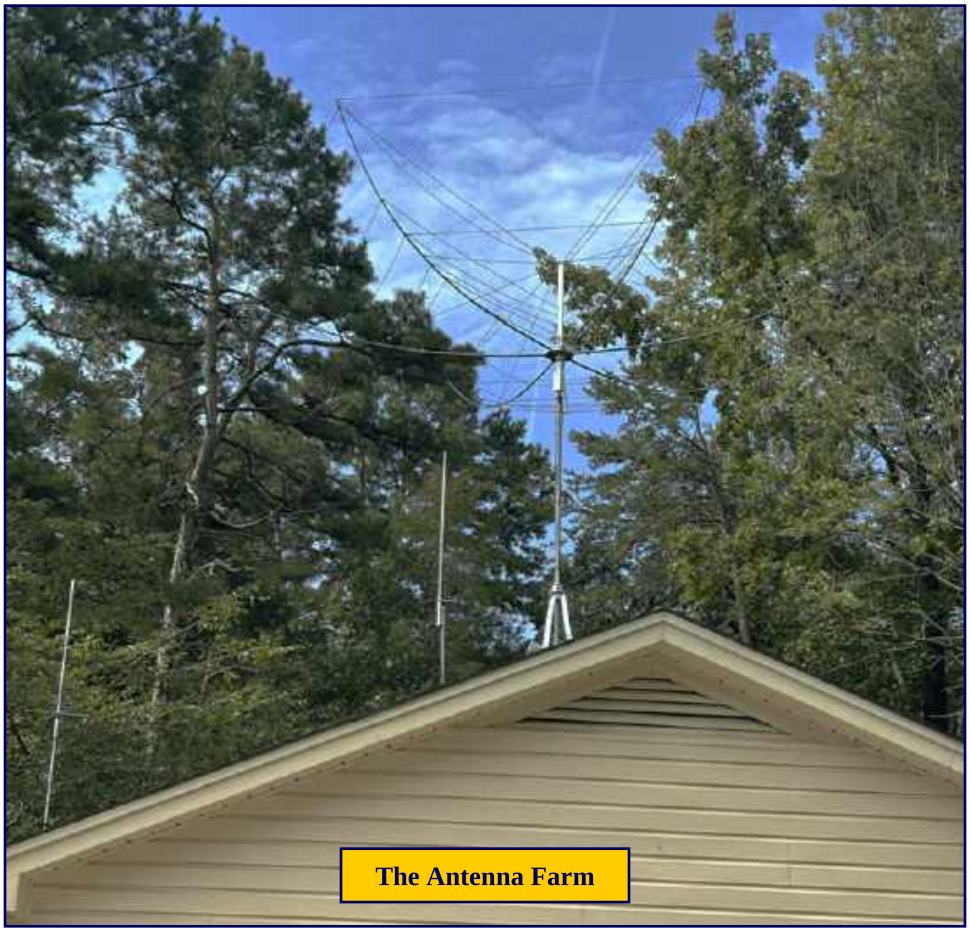
After Picture : The Operating Area

Show Us Your Shack Continued on page 26

Show Us Your Shack - Continued from page 25

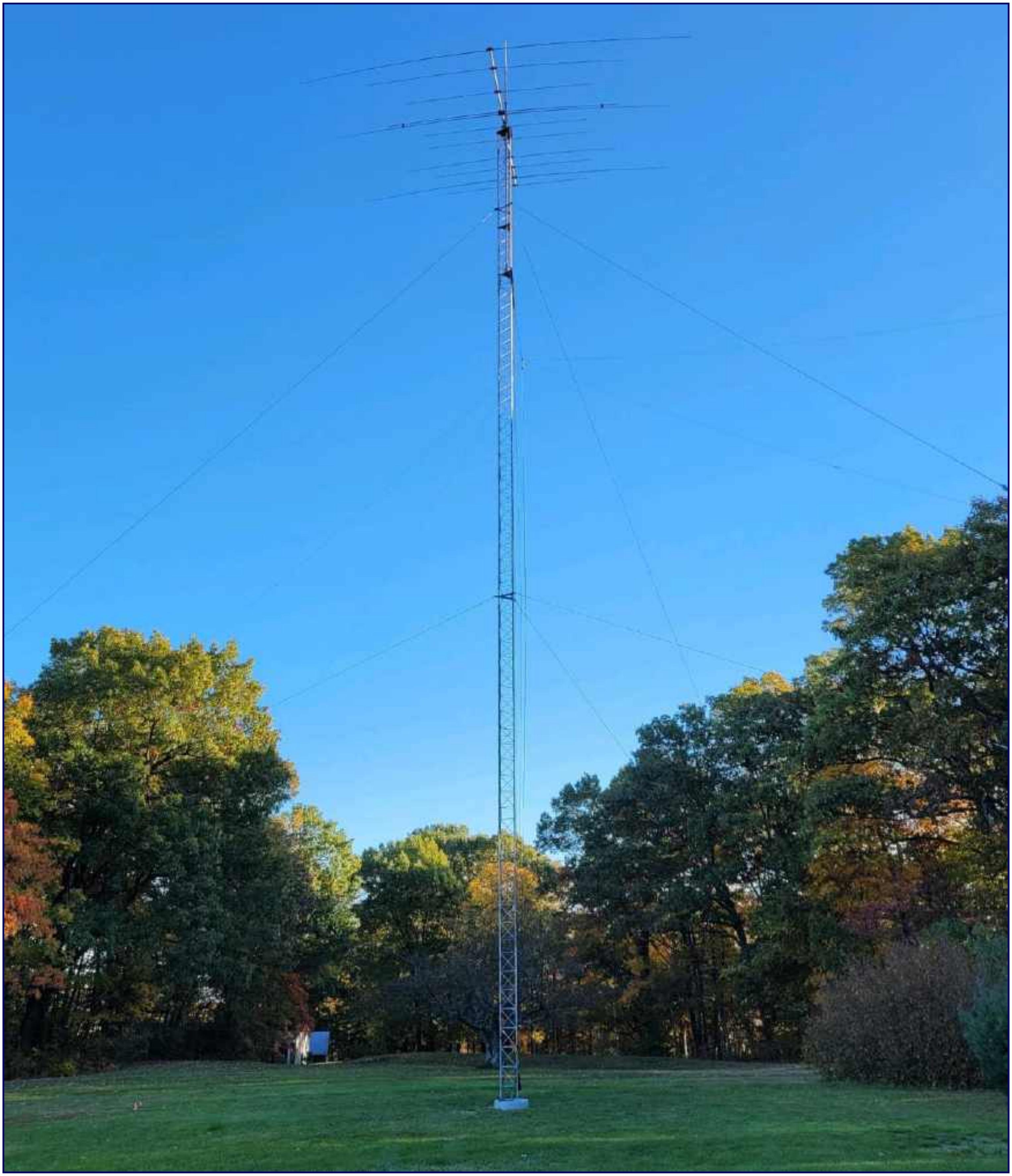


My Lab Bench



The Antenna Farm

News from the western front : The new tower is up at K3TS in WPA, just in time for the CQWW DX SSB contest! All is well, but I miss good pizza! 73 to all in SNJ from WPA. Tony K3TS
Adam Zaimes N3TTT YouTube Video : https://youtu.be/dP-nBx-cQrI?si=NiEHWTIGe962z2vd



2024-2028 Element 4 Amateur Extra Class License Question Quiz

This month we continue with Subelement E1 Commission Rules (6 exam questions - 6 groups).
(Answers on ‘Last Page Calendar’)

E1E01
For which types of out-of-pocket expenses do the Part 97 rules state that VEs and VECs may be reimbursed?
A. Preparing, processing, administering, and coordinating an examination for an amateur radio operator license
B. Teaching an amateur operator license examination preparation course
C. No expenses are authorized for reimbursement
D. Providing amateur operator license examination preparation training materials

E1E02
Who is tasked by Part 97 with maintaining the pools of questions for all US amateur license examinations?
A. The VEs
B. The FCC
C. The VECs
D. The ARRL

E1E03
What is a Volunteer Examiner Coordinator?
A. A person who has volunteered to administer amateur operator license examinations
B. An organization paid by the volunteer examiner team to publicize and schedule examinations
C. An organization that has entered into an agreement with the FCC to coordinate, prepare, and administer amateur operator license examinations
D. The person who has entered into an agreement with the FCC to be the VE session manager

E1E04
What is required to be accredited as a Volunteer Examiner?
A. Each General, Advanced and Amateur Extra class operator is automatically accredited as a VE when the license is granted
B. The amateur operator applying must pass a VE examination administered by the FCC Enforcement Bureau
C. The prospective VE must obtain accreditation from the FCC
D. A VEC must confirm that the VE applicant meets FCC requirements to serve as an examiner

E1E05
What must the VE team do with the application form if the examinee does not pass the exam?
A. Maintain the application form with the VEC’s records
B. Return the application document to the examinee
C. Send the application form to the FCC and inform the FCC of the grade
D. Destroy the application form

Element 4 Amateur Extra Class Quiz - Continued on page 29

Element 4 Amateur Extra Class Quiz - Continued from page 28

E1E06
Who is responsible for the proper conduct and necessary supervision during an amateur operator license examination session?
A. The VEC coordinating the session
B. The designated monitoring VE
C. Each administering VE
D. Only the VE session manager

E1E07
What should a VE do if a candidate fails to comply with the examiner's instructions during an amateur operator license examination?
A. Warn the candidate that continued failure to comply will result in termination of the examination
B. Immediately terminate the candidate's examination
C. Allow the candidate to complete the examination, but invalidate the results
D. Immediately terminate everyone's examination and close the session

E1E08
To which of the following examinees may a VE not administer an examination?
A. Employees of the VE
B. Friends of the VE
C. Relatives of the VE as listed in the FCC rules
D. All these choices are correct

E1E09
What may be the penalty for a VE who fraudulently administers or certifies an examination?
A. Revocation of the VE's amateur station license grant and the suspension of the VE's amateur operator license grant
B. A fine of up to $1,000 per occurrence
C. A sentence of up to one year in prison
D. All these choices are correct

E1E10
What must the administering VEs do after the administration of a successful examination for an amateur operator license?
A. They must collect and send the documents directly to the FCC
B. They must collect and submit the documents to the coordinating VEC for grading
C. They must submit the application document to the coordinating VEC according to the coordinating VEC instructions
D. They must return the documents to the applicant for submission to the FCC according to the FCC instructions

E1E11
What must the VE team do if an examinee scores a passing grade on all examination elements needed for an upgrade or new license?
A. Photocopy all examination documents and forward them to the FCC for processing
B. Three VEs must certify that the examinee is qualified for the license grant and that they have complied with the administering VE requirements
C. Issue the examinee the new or upgrade license
D. All these choices are correct

Amateur Radio Emergency Services - November 2024
Resources - News - Updates

By Bob Keogh, KD2NEC - kd2nec@qsl.net
Gloucester County Emergency Coordinator

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In This Issue :

- **Never Forget Hurricane Sandy**
- **Simulated Emergency Test (SET 2024)**
- **Child Abduction Response Team (CART 2024)**

HURRICANE SANDY - October 29, 2012

If you've been watching the news recently, you know that we have been very lucky in New Jersey. The purpose of revisiting this event is to simply remind ourselves that a major storm like Sandy can hit New Jersey at any time and we need to be prepared.

Even though Hurricane Sandy was declared a post-tropical cyclone by the time it made its final landfall - just 5 miles southwest of Atlantic City, New Jersey at about 8 PM EDT on Monday, October 29 - the storm still had winds in excess of 80 miles per hour. Hams across the region, from the Carolinas to Maine, responded to requests for assistance and activated local nets, supported the Hurricane Watch Net's and the VoIP Hurricane Net's operations, assisted their local and state Emergency Operations Centers and aided shelters and wherever needed.

Northern New Jersey

Two hospitals in New Jersey requested assistance from radio amateurs. According to ARRL Northern New Jersey Section Emergency Coordinator **George Sabbi, KC2GLG**, the hospitals were experiencing issues with their communications systems they use for direct communications between these their facilities in Middlesex and Union Counties.

Sabbi said that a shelter in Bergen County utilized radio amateurs when it opened on Monday, October 29 until late in the morning the next day. "Operators went off duty for rest and came back on Tuesday. The Red Cross is working on getting more Amateur Radio resources into additional shelters, noting that travel is a restriction for many volunteers due to the numerous road closures all over the state. I've received several reports of repeaters being on backup power or off-the-air, and in all cases, we've moved to alternate frequencies."

Southern New Jersey

Through its Ham Aid program, the ARRL sent six VHF radios to Ocean County, New Jersey. ARRL Ocean County Emergency Coordinator **Bob Murdock, WX2NJ**, programmed them for deployment to the six shelters in Ocean County shelters today. One of the ARRL's National VOAD partners, NECHAMA - Jewish Response to Disaster, provided transportation to Ocean County.

SNJ ARES Update - Continued on page 31

SNJ ARES Update - Continued from page 30

ARRL Southern New Jersey Section Emergency Coordinator **John Zaruba, K2ZA**, ran a Section Resource net on the SNJ ARES repeater at 7 AM, 1 PM and 7 AM each day to provide support to the County Emergency Coordinators. He sent requests, asking for six relief operators from within the Section to deploy to Atlantic County and another six relief operators to go to Ocean County. Both shoreline counties used Amateur Radio in the shelters run by the American Red Cross.

"As of Wednesday, October 31, commercial communications are coming back online in the inland counties, with some counties, such as Mercer County, starting to use radio amateurs to assist in damage assessment as roads become more passable," explained ARRL Southern New Jersey Section Manager **Gary Wilson, K2GW**. "The other counties are being polled for mutual aid operator support to Ocean and Atlantic County. I believe John is also starting communications with the Eastern Pennsylvania, Northern New Jersey and Western Massachusetts Sections about their eventually providing relief operators."

Wilson said that the NJ2EM operation at the New Jersey State Police's State Office of Emergency Management was secured on October 31, "as they have commercial contact now with all of the county EOCs, although their statewide 220 MHz repeater is still available for county-to-county communication."

On Thursday, November 1, Wilson told the ARRL that the "communications emergency" in the nine counties that make up the ARRL's Southern New Jersey Section is over. "While the recovery will take a long time, commercial communications systems are being restored in most parts of the Section," he said. "Amateur Radio emergency operations are continuing in Ocean and Atlantic Counties under the direction of their County Emergency Coordinators."

Ocean County Emergency Coordinator **Bob Murdock, WX2NJ**, said that the six shelters in the county are being consolidated into one shelter. "At this time, he thinks the one last shelter might remain operational for about a week," Wilson said. "The ARRL Ham Aid VHF radios are working great there. In Atlantic County, Emergency Coordinator **John Miller, KC2TNV**, reported that relief operators are needed to give the operators a needed rest. Zaruba is currently polling the other counties in the Section for mutual aid operator support to Atlantic County. Both shoreline counties will continue to determine their long-term Amateur Radio needs on a daily basis, based on the American Red Cross' sheltering plans and the state of commercial communication restoration."

Wilson told the ARRL that one of the reasons that New Jersey is somewhat better prepared than other states is that the New Jersey Office of Emergency Management won't approve a County Emergency Management Plan unless it includes a RACES annex. "As a result, every county EOC has permanent Amateur Radio capability on 2 meters simplex, a 220 MHz radio aimed at the NJ2EM 220 MHz repeater that covers the entire state, 2 meter APRS for text messaging and HF capability on 75 meters LSB," he explained. "These are tested once each month on statewide nets. Similarly, each American Red Cross chapter tests its 2 meter capability monthly with the central Red Cross station at N2ARC in Princeton, which then links to the State Emergency Operations Center in West Trenton. And of course, each county has a 2-meter repeater designated for their own work at the county level.

We have much better communication tools today such as WinLink that give us the capability of sending and receiving email anywhere in the world.

We should be prepared on a personal level at home, as well as helping our friends and neighbors. If the storm doesn't impact us here in Gloucester County, we should be prepared to help others by providing Emergency Communications to our served agencies i.e. the American Red Cross. This is why we take the training and practice using our tools.

SNJ ARES Update - Continued on page 32

SNJ ARES Update - Continued from page 31

OCTOBER EVENTS
Simulated Emergency Test (SET 2024) - Saturday, October 5, 2024
Gloucester County Assignments

Red Cross Southern New Jersey Chapter Office, Pennsauken NJ

1. Staffing the Pennsauken "Hub" :
    - **Doug Dersch, KD2VQA**
    - **Greg Ciraula, K3GC**
    - **Bob Keogh, KD2NEC**
    - **Steve Farney, W2SEF**
2. Our task was to coordinate Emergency Communications between the Red Cross Shelter, located in the Woodbine Shelter in Cape May County and the Pennsauken Hub.

OEM Shelter on the Rowan College Campus in Sewell NJ.

1. Staffing the OEM Shelter :
    - **Court Smith, KD2SPJ**
    - **Angela Metzger, KE2DRJ**
    - **Bruce Canino, KD2LBU**
    - **Adam Duncan, W3DUN**
    - **David Danichkin, KD2UXC**
2. The Rowan Shelter was given messages that needed to be sent via WinLink and accomplished all their goals.

Both teams ran into Static on the voice net but quickly resolved the problem and were able to meet all of their goals for SET 2024.

CHILD ABDUCTION RESPONSE TEAM (CART 2024) - Thursday, October 17, 2024
Gloucester County Assignments

We had six GCARC members and Frank Messick, W2FJM that participated in the CART Drill this year :

- **Angela Metzger, KE2DRJ**
- **Bob Keogh, KD2NEC**
- **John Czuba, K2AEN**
- **Frank Messick, W2FJM**
- **Doug Dersch, KD2VQA**
- **Karl Frank, W2KBF**
- **Gary Triplo, KD2EBX**

We were all given a role to play in a simulated child abduction in the Clayton area. We were provided with scripts that indicated we saw the child and her abductor, in multiple locations. We would then deliver the "lead" to one of the Police Roadblocks, for them to call-in the leads to the 911 Center.

We were given an app to download on our cell phones, so that we could see everything that was happening in real time. It was a great experience for us and the people from the Gloucester County Prosecutors Office were very thankful for our participation.

SNJ ARES Update - Continued on page 33

SNJ ARES Update - Continued from page 32

Gloucester County Child Abduction Response Team 2024
(L-R) Angela Metzger, KE2DRJ; Bob Keogh, KD2NEC; John Czuba, K2AEN; Frank Messick, W2FJM; Doug Dersch, KD2VQA; Karl Frank, W2KBF; Gary Triplo, KD2EBX

Operating Tip

We've traced the RFI! It's coming from inside the house! Have you checked your noise floor lately? RF interference can be horrific and negatively affect your contest scores. Performing a periodic noise audit can help you stay on top of things. Power a receiver from a noiseless source such as a battery and turn everything else off in your location at your circuit-breaker panel. Note the noise levels on each band, then turn everything on again. If you detect a difference, it could be time to do a thorough search for the offending radiator. Start by turning off each breaker again until the noise abates - that's the circuit that has the device-making noise.

Usually it's a switching power supply, but unusual sources have included arcing filaments inside incandescent or halogen bulbs, marginal or defective fluorescent bulbs or ballasts, arcing thermostats, space heaters, LED lights, wall dimmers, variable-frequency drives on furnace or A/C motors, damaged underground feeders to outbuildings, and marginal connections where arcing is occurring.

Phil-Mont Mobile Radio Club's
75th Anniversary Banquet

Saturday, November 9, 2024
1600 to 2000 Hours

The Veterans Home Association of Whitemarsh Valley
493 South Bethlehem Pike
Fort Washington, PA

Regional Skywarn Websites For On-Line And In-Person Training Classes

Philadelphia/Mt Holly Skywarn : www.weather.gov/phi/skywarn
State College, PA Skywarn : www.weather.gov/ctp/skywarn
Pittsburgh, PA Skywarn : www.weather.gov/pbz/skywarn

State College, PA Skywarn Advanced Winter Spotter Talk - Virtual
Thursday, November 14, 2024 @ 1800 to 2000 Hours
Google Meet : https://meet.google.com/xrj-vuka-mjc ; Phone : 910-634-0889; PIN : 703 198 061#

Weather Information Nets & Frequencies

Hurricane Watch Net : www.hwn.org

- **Day Time : 14.325 MHz**
- **Night Time : 7.268 MHz**
- **Information : 14.300 MHz**

Local SKYWARN Frequencies :

- **Atlantic County : K2BR, 146.745 MHz (-) 146.2 Hz, Net Every Monday @ 1900 Hours**
- **Camden County : K2EOC, 146.895 MHz (-) 91.5 Hz, Net Every Thursday @ 2030 Hours**
- **Cumberland County : KE2CK, 146.805 MHz, (-) 118.8 Hz**
- **Gloucester County : W2MMD, 147.180 MHz (+) 131.8 Hz, Net Every Sunday @ 1930 Hours**
- **Salem County : N2KEJ, 146.625 MHz (-) 131.8 Hz**

Club Merchandise from the K2ZA Workshop
Contact John Zaruba Jr, K2ZA at k2za@icloud.com
Go To : https://gloucestercountyarc.weebly.com/club-merchandise.html

Monday & Thursday Night 40 Meter Net @ 1930 Hours
7.225 MHz (+ / - 5 or 10 kHz)
NCS : Jim Clark, KA2OSV

Full Beaver Moon : Friday, November 15, 2024 @ 1629 Hours

This was the time when beavers finished preparations for winter and retreated into their lodges. In the 1760s, Captain Jonathan Carver heard this Native American term during his travels. Also in the realm of animals, Deer Rutting Moon (Dakota, Lakota) refers to the mating season. Digging/Scratching Moon is a Tlingit term for when bears dig their winter dens. Whitefish Moon (Algonquin) describes the spawning time for this fish. As cold temperatures deepen, the terms Frost Moon (Cree, Assiniboine) and Freezing Moon (Anishinaabe) were also used.

Old Farmer's Almanac - www.almanac.com

Jersey String Band Report For November 2024

By Glenn Dougherty, N2YIO

Hi All we are now in the heart of Mum Season! We will start drill practice on Sundays, the first week in November through New Years Eve. Along with our regular Wednesday music rehearsal in between those two rehearsals we do have some upcoming parades and also our 6th Anniversary as a formal string band.

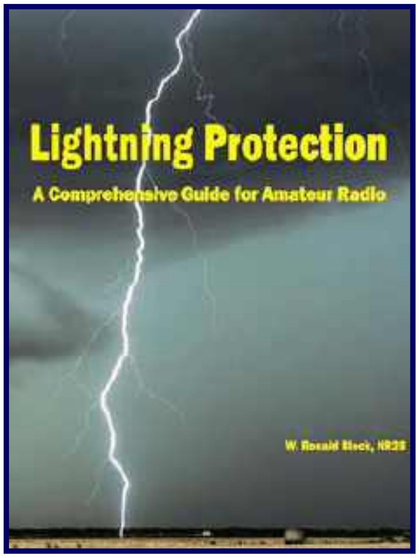
- Saturday, November 9, 2024 : 6th Anniversary Party
- Saturday, November 23, 2024 : Brookhaven Parade
- Saturday, November 30, 2024 : Swedesboro Parade
- Our Last Parade of 2024 - Saturday, December 7, 2024 West Cape May Christmas Parade. This is a Great Evening Parade!

That is it for our 2024 season. We have very high hopes for our New Years Day 2025 show. We can still use help behind the scenes as marshals for help with props or if you know anyone that plays Banjos, Saxophones, or Accordions, we can always use a few more.

Our Theme for 2025 is a spy theme and some of the music will include The Pink Panther and Mission Impossible. Check out episode 17 of the Jersey String Band Podcast with The President Of the Philadelphia Mummers String Band Association on U Tube. **https://www.youtube.com/@JerseyStringBand**

**Thursday,
November 28, 2024**

**Lightning Protection :
A Comprehensive Guide for Amateur Radio
Author : W. Ronald Block, NR2B
Contact : ron@wrblock.com
Website : www.wrblock.com**

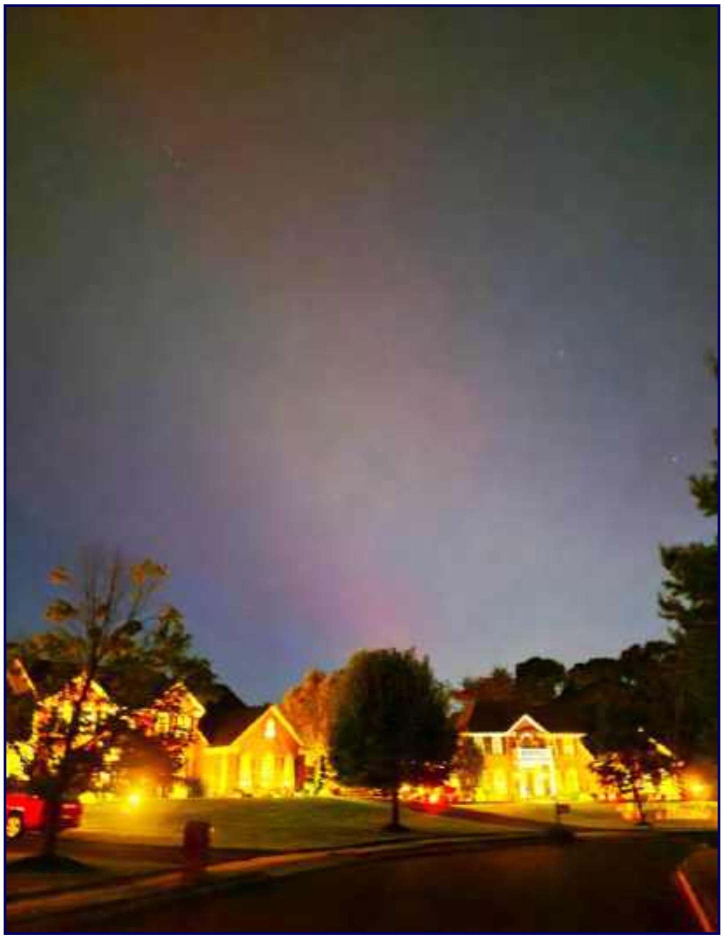


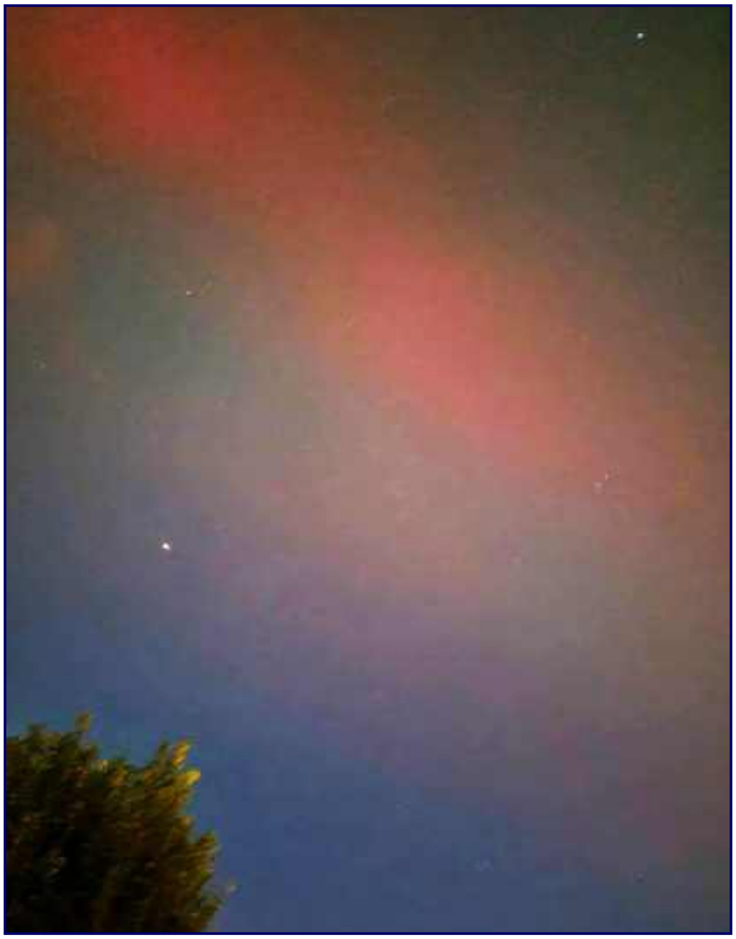
Aurora Borealis In New Jersey?

By Jim Wright, N2GXJ

Yes! In the early evening of October 10, 2024, many of your fellow Club members, friends, and neighbors here in Southern New Jersey saw something in the sky many of us had not seen there before - an outbreak of Aurora Borealis! I would have totally missed it, if not for a text message at 7:45pm from **Frank Romeo, N3PUU** (thank you Frank!)

As soon as I got the message, I raced outside and looked North, but disappointingly, did not see anything. The sky was not dark, appearing to me as washed out with moonlight and lights from a nearby sports stadium. So I called Frank, asking for help. I was told he was actually seeing them stronger in the South West instead North, so I turned to look down the street in that direction (not the direction I was expecting for "northern lights"). Sure enough, yes, there did seem to be something there. Clicking a few pictures on cell phone in night mode in that direction confirmed what I was seeing, making it obvious. Aurora Borealis in New Jersey - there they were! Anyone else see them that evening?





This has not been the only lower latitude aurora displays this year. Back in May 2024, a number of large solar flares and coronal mass ejections (CMEs) in quick succession directed towards Earth created what some have called the strongest displays of auroras on record in the past 500 years. Though quite visible in Seattle, unfortunately, the skies were cloudy here in NJ so we missed seeing that one. Here in October, to a slightly lesser extent, Earth was treated to lower latitude aurora again, but this time with clearer skies in NJ. Which begs the question - will there be a chance to see them again? Maybe. NASA and NOAA issued a joint statement on October 15 declaring the sun is now in its solar maximum period, which could last for the next year. So for about the next year, there might be a chance. We'll have to wait and see!

Antenna Rotator Controller Build - Part 1

By Chris Prioli, AD2CS - chris@ad2cs.com - www.ad2cs.com

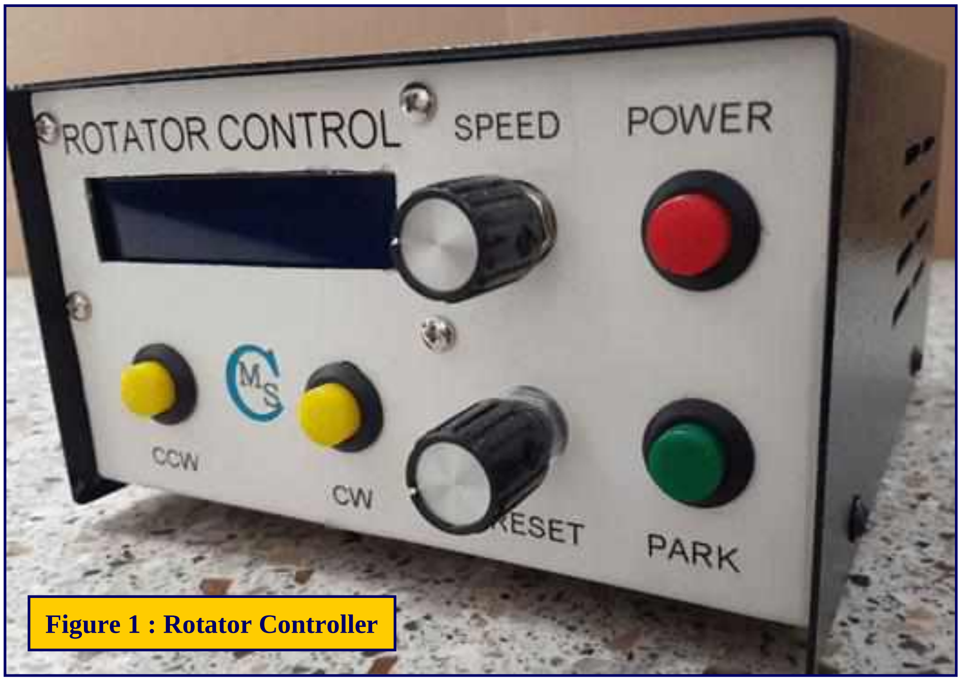


Figure 1 : Rotator Controller

It is kind of funny how things work out. I bought a missile-launcher type of mast for the specific purpose of supporting my new hex-beam 6-band folded-dipole antenna. The antenna covers 20-meters, 17-meters, 15-meters, 12-meters, 10-meters, and 6-meters, with the driven elements of each band in a "W" shape, and the reflectors arranged in an open half-hexagon opposite the driven elements. Each of the band elements occupies a specific slot in the concentric hexagons, with the longest (20-meter) naturally to the outside and the shortest (6-meter) to the center. This antenna is highly directional, which brings us to the topic of this article.

For best results, a directional antenna requires a means of turning or "aiming" the antenna in the desired direction, that being the direction of maximum forward gain. Following the very good advice of fellow Club members ***Frank Romeo N3PUU*** and ***Al Arrison KB2AYU***, I designed a two-level rotator motor support system, with the rotator motor mounted to the lower-level platform, while the upper-level plate holds a hefty thrust bearing intended to support the antenna mast against lateral forces such as heavy wind gusts.

The rotator motor itself is a Yaesu G-800-series unit, which operates on voltages up to 24VDC, with a 5VDC sensing circuit that outputs a voltage from 0VDC to 4.5VDC, proportional to the rotator's angular position between 0° and 450°, a full one and one half turns of the mast.

Once the rotator was designed and built, the next logical need was for a unit to control the rotator motor from within the shack. In my situation, the hex-beam is located about a hundred and twenty-five feet from the shack, a not unreasonable distance. What was needed was a controller that could output the required motor voltage of up to 24VDC, with the ability to reverse the polarity of these outputs in order to reverse the motor and therefore the rotator direction. In addition, the unit would need to be able to power and read the control circuit, interpreting the 0-4.5VDC position voltage signal correctly. Furthermore, there was a need to be able to control the rotational speed, ramping it up and slowing it down as required as the limits of the desired travel approach. My desire was for an ***azimuth-only rotator controller (Figure 1)***, as I have no need or capability for any elevation adjustment.

Once again, I turned to ***Frank Romeo N3PUU*** for advice. Frank had built just such a controller for the GCARC Clubhouse HF station. I wanted to duplicate his build for my own station, as it was well-suited to the task at hand. Frank was extremely helpful to me, sharing freely of his design, including providing part numbers where available for the components used in his build. Frank's design was based on the design published by ***Anthony Good K3NG***, a Radio Amateur from Jim Thorpe, Pennsylvania. The ***K3NG*** design included far more capability than I needed, so it was a matter of paring it down to just those features that I wanted to include, and then also to make some minor modifications to the programming of the microcontroller (µC) to tailor the operation to my needs.

Antenna Rotator Controller Build - Continued on page 38

Antenna Rotator Controller Build - Continued from page 37

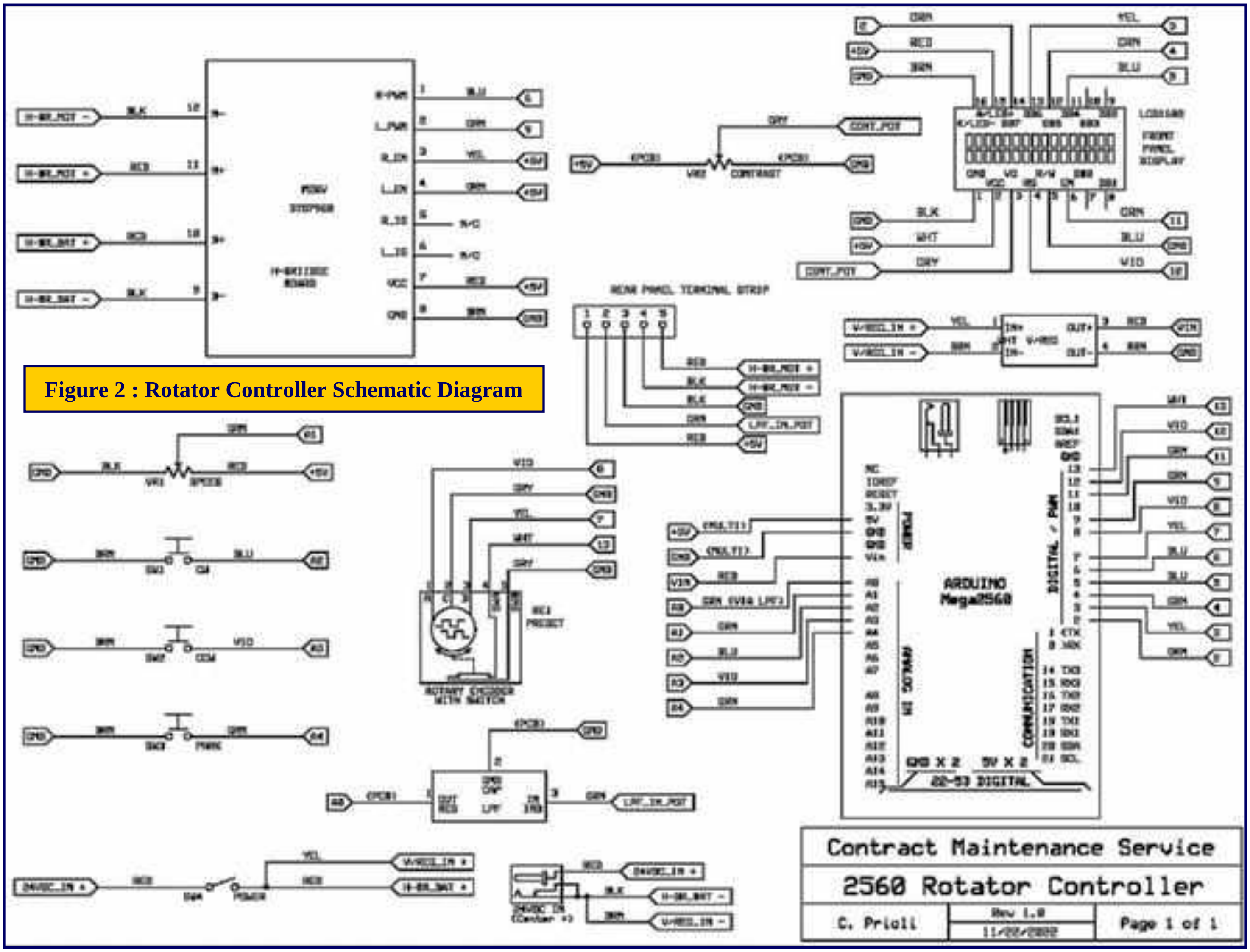


Figure 2 : Rotator Controller Schematic Diagram

The rotator controller, as shown in the ***schematic at Figure 2***, is based on an Arduino Mega 2560 controlling a dual H-bridge motor driver board. A simple 5VDC-output power supply board is incorporated as a part of the unit, and the front panel uses a sixteen-character per row, two-row backlit LCD panel for communication of the unit status. On the front panel, there are controls for parking the rotator, turning the rotator in the clockwise direction, turning it in the counter-clockwise direction, controlling the rotator motor speed, and setting the rotator to a preset angular position. Of course, there is also a power switch mounted there. The rear panel has the 24VDC power inlet jack, the USB type “B” jack for the Arduino board, and the barrier-type terminal strip carrying the leads to and from the rotator motor.

The ***Arduino Mega 2560 (Figure 3)*** is used with a blank ***2560 shield board (Figure 4)***, onto which certain specific components have been added. First off, pin headers must be installed along the right and left edges of the board, inserting them into the analog and digital ports from the underside of the board, thus enabling the board to be stacked onto the Arduino Mega 2560. Specifically, a total of fifteen pins (one eight-pin strip and one seven-pin strip) are installed to the right-hand edge, from port 15 up the right edge of the board to port 13. Then, three eight-pin strips are installed to the left-hand edge of the board, including the stretch from port A8 to A15, from A0 to A7, and from VIN up to and including the unmarked port just past the IOREF port. The remainder of the modifications to the shield board are made on top of the board.

Antenna Rotator Controller Build - Continued on page 39

Antenna Rotator Controller Build - Continued from page 38

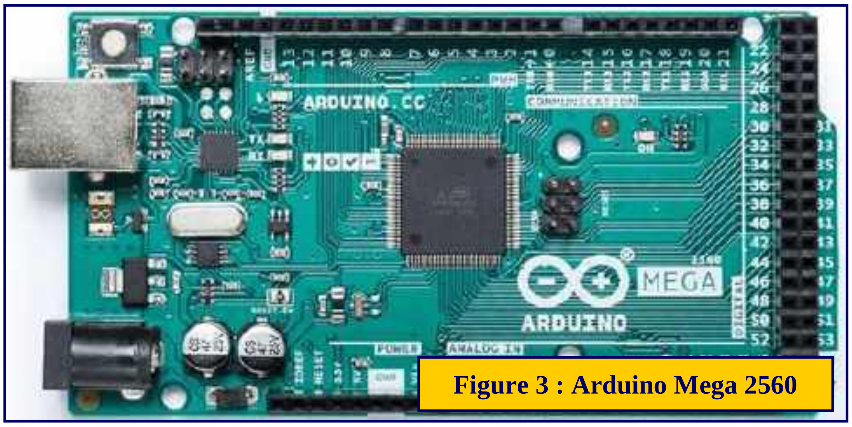


Figure 3 : Arduino Mega 2560

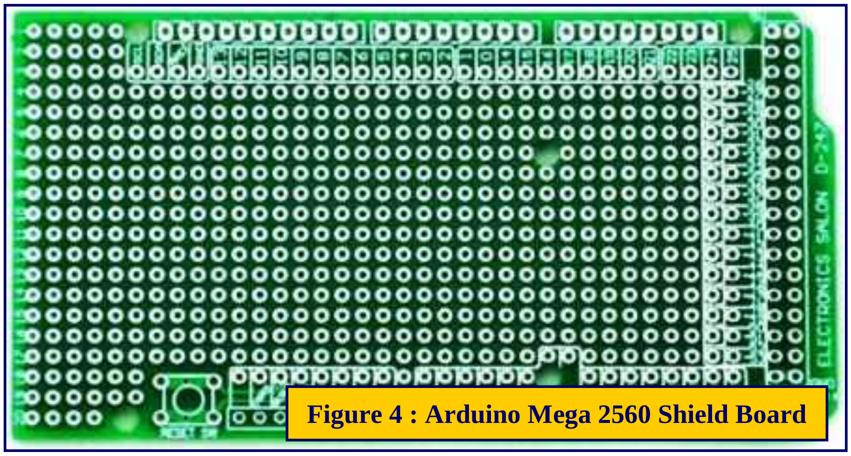


Figure 4 : Arduino Mega 2560 Shield Board

A pin-header row of twelve pins must be installed in a line across the shield board, in alignment with the second GND port on the left edge of the board, directly opposite the pin 6 port on the right edge. Underneath the shield board, all of these pins must be soldered together. The first hole is already tied to the GND port. Next, a similar row of seven pins must be installed in alignment with the +5V port on the left edge of the shield board. These pins too must all be soldered together; again, the first hole is already connected to the +5V port. In a similar manner, single pins are installed in alignment with the VIN, the A0, the A1, the A2, the A3, and the A4 ports along the left edge of the shield board. Along the right edge of the shield board, single pins are installed in alignment with the ports numbered 2 through 13. A lone single pin is installed in the fifth hole inboard from the AREF port hole on the shield board’s right edge.

Next up is to install a low-pass filter consisting of a 4.7nF 3kV ceramic disc capacitor, a 250mW 5% 1kΩ carbon film resistor, and a 150µH conformal coated wirewound inductor. The placement of this filter is not critical, so long as it ties in to the proper port of the Arduino and is properly connected to the external circuit. The way that I installed the LPF is as follows :

- The resistor is formed to a lead spacing of 0.4” and placed with one lead in the first hole next to the port A0 pin, occupying holes 1 through 5 in the A0 row
- The capacitor is inserted with one lead into hole 6 in the A0 row perpendicular to the A0 row, so that its opposite lead will fall into hole 6 of the first GND row of the shield board
- The inductor is formed to a lead spacing of 0.4” and placed with one pin in hole 6 of the A1 row, occupying holes 6 through 10 of that row
- A single header pin is installed into hole 10 of the A0 row
- The various adjacent component leads are soldered together, thus connecting one end of the resistor to the A0 pin, connecting the RLC joint in the center of the filter, and connecting the pin in hole 10 of the A0 row to the second end of the inductor
- The ground end of the capacitor must be soldered to the row of ground pins

The shield board must also have a provision for adjusting the contrast of the LCD panel. This is accomplished by installing a single-turn trimmer potentiometer into the area between the +5VDC pin row and the lone header pin installed in the AREF row. Install the trimpot so that its single pin side is towards, aligned with, and two rows down from the lone pin in the AREF row, placing that pin of the trimpot into the port 13 row. That pin of the trimpot must be soldered to the single header pin two rows above it. Of the two remaining pins, the one to the left must be tied into the +5V pin row, while the trimpot pin on the right gets tied directly to the GND pin row. The Arduino shield board is now fully prepared, and it is time to start preparing the ***BTS-7960 43A dual H-bridge (Figure 5) board***.

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Antenna Rotator Controller Build - Continued from page 39

At least one and maybe two modifications are required to be made to the H-bridge board. The first mod, necessary in all cases, is to desolder and remove the four-pin terminal block from the upper edge of the board, where the 24VDC current in and motor current out points are located. The easiest way to remove this connector is to first cover the pin area with rosin flux, and then to solder a three-quarter-inch long segment of bare solid 10AWG wire across all four pins of the connector, using plenty of solder to secure the wire to the pins. Then, working with the foil side of the PCB upward and the connector facing downward, simply heat and melt the solder that was flooded onto the pins, keeping the iron moving to melt the entire solder pool. Once the solder is adequately melted, the connector will simply fall out of the board. Clean up the board using solder wick to remove the remaining solder and to open the component pin holes, finishing the job with some 99% IPA to remove the remaining flux.

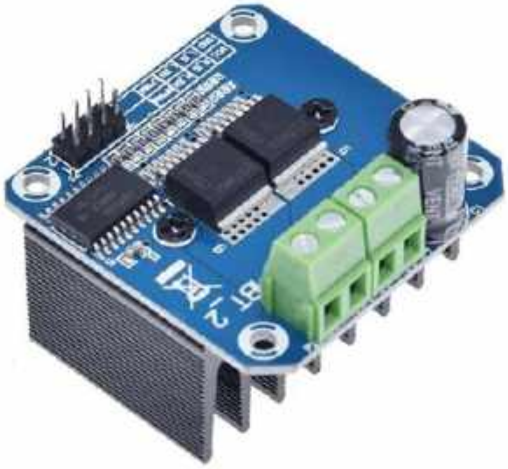


Figure 5 : BTS-7960 Dual H-Bridge Board

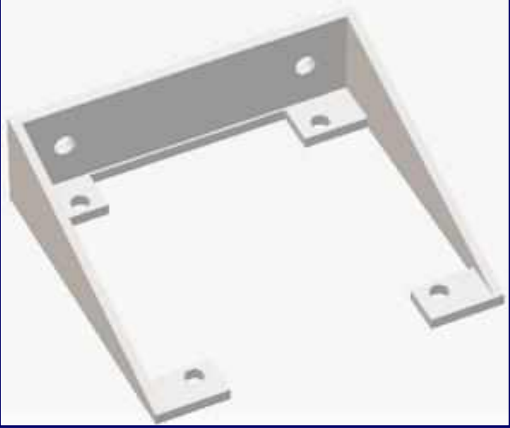


Figure 6 : H-Bridge Board Bracket

The second modification can be done in some different ways. This mod involves the eight header pins at the lower right corner where the communication from the Arduino meets the H-bridge board. The problem, as I saw it, was that these header pins came straight out from the board, which puts them into an interference situation with the ***H-bridge board bracket (Figure 6)*** as well as with the edge of the Arduino and its shield boards. I built two copies of this controller (more about that later), and I handled this problem in two different ways on the two builds. In the first build, I removed the straight header pins and replaced them with a 45° header set, to which the requisite wires would simply plug onto just as they would have onto the original straight header. In the second build, I did away with the pin header there altogether, opting instead to simply solder the wire leads directly into the pin header holes in the PCB. This turned out to be the better alternative in the long run. The wires were still plug-ins at their opposite ends, so ease of disconnection for testing, repair or replacement was still maintained, but the connection at the H-bridge board was now more compact as well as being more reliable. The H-bridge board itself is mounted vertically to a custom 3-D printed bracket, which in turn is mounted to the floor of the enclosure, placing the board-mounted heat sink towards the outside of the enclosure and the motor current connections at the top of the board. The mounting position of the H-bridge board is well-considered, as the heat sink channels are thus arranged in a vertical orientation, providing for better cooling with a chimney effect, and the high-current motor leads are at the top of the board, where any heat radiated from them will be unable to do any harm to other components above them.

Because of the fact that the H-bridge requires a +24VDC supply, the unit is powered by an off-the-shelf 117VAC input to 24VDC/3A output power supply. I designed and built a small +5VDC supply that draws off the incoming +24VDC, and I used that to power the control circuitry of the H-bridge board as well as the Arduino. Because I already needed the +5VDC supply as above, there was no sense in not also powering the Arduino from that same +5VDC supply, which is capable of delivering a full ampere of current. However, doing so required a little bit of surgery to the Arduino, as we do not want two competing power supplies to the Arduino, nor do we want the +5VDC from the onboard supply feeding back to the host PC when the rotator controller is connected to a PC for CAT control of the radio system. To that end, the fuse on the Arduino must be removed.

Antenna Rotator Controller Build - Continued on page 41

Antenna Rotator Controller Build - Continued from page 40

The fuse on the ***Arduino Mega 2560 (Figure 7)*** is a self-resetting type and is located directly adjacent to the USB connector shell. Judicious application of heat via a soldering iron will allow removal of the fuse from the board. Do this carefully so as not to damage the board pads or substrate. Note however that once the fuse has been removed, it will no longer be possible to power the Arduino through the USB cable in the usual manner.

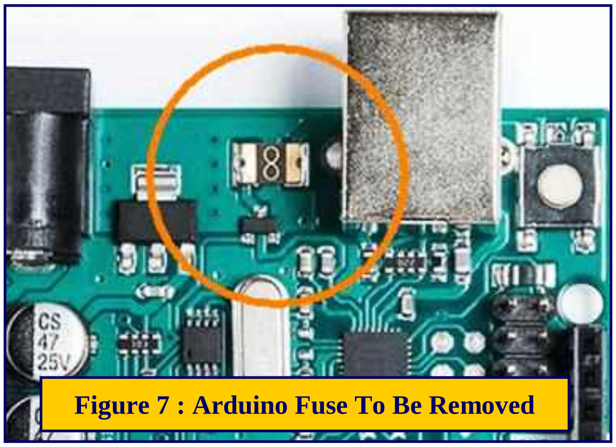


Figure 7 : Arduino Fuse To Be Removed

Let's move on to the +5VDC supply. This power supply is an incredibly simple contrivance, consisting of three components and a few header pins on a small printed circuit board. The ***board (Figure 8)*** carries a pair of electrolytic capacitors - a 0.22µF input capacitor and a 0.1µF output capacitor - as well as a common LM7805 three-pin voltage regulator IC. The board has four single header pins, one each for input voltage, output voltage, and the input and output ground leads. The incoming power to the voltage regulator comes directly from the +24VDC supply via the power switch; the output is routed to the VIN port of the Arduino via that pin on the shield board. The input ground is the negative side of the incoming 24VDC supply, and the output ground is routed to the Arduino GND port on the shield board.

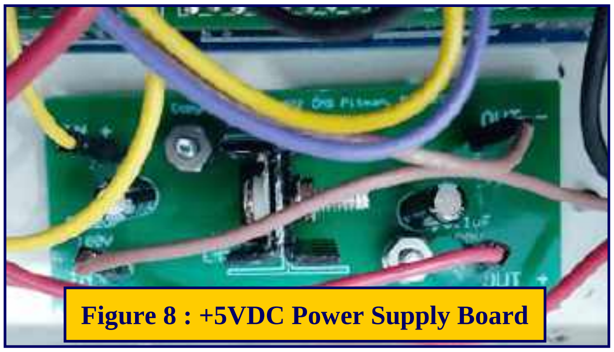


Figure 8 : +5VDC Power Supply Board

The ***POWER switch on the front panel (Figure 9)*** is a latching pushbutton switch of the SPST type. This switch and the other pushbutton switches are all of a single family (DS-228) of switches having commonality in size and physical appearance. Of course, I selected different colors for different functions, to help make switch recognition a bit easier. While all of these pushbutton switches are SPST normally-open types, only the power switch is a latching switch.

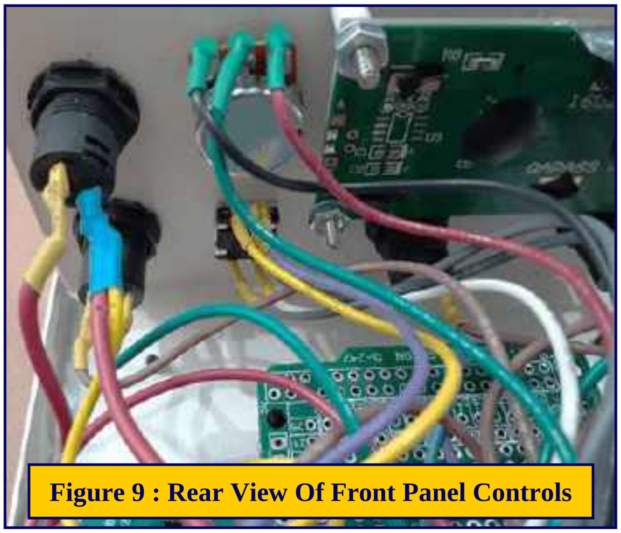


Figure 9 : Rear View Of Front Panel Controls

The ***CW*** and ***CCW*** controls are normally-open momentary pushbutton switches, each of which grounds the port to which the switch is connected when the switch is closed ***(i.e., when the button is pressed)***. So long as either of these two switches is held closed, the rotator will turn in the direction indicated by the switch that is pressed. The directional view of the rotator is as if it were being looked at from above. The ***PARK*** switch is a similar switch, which also grounds its connected port. However, with this switch, pressing it and grounding the ***PARK*** port of the Arduino triggers a planned motion which rotates the motor to a specific pre-programmed rotational angle. Often, an antenna owner will want to park an antenna so that it offers the least amount of wind load in the direction of the prevailing local wind. Unfortunately, this practice can also result in premature wear to the rotational sensing potentiometer and the teeth of the internal gears due to the constant vibration of the antenna in that one fixed position. In any event, the ***PARK*** switch function is to return the rotator to its pre-programmed parking position and stop it there.

Part 2 of Antenna Rotator Controller Build will be in the December 2024 CrossTalk
The full version is on the website at : https://gloucestercountyarc.weebly.com/antenna-rotator-controller.html

New Towers Installed At AB2E QTH

Darrell Neron, AB2E

Hi all, I made the following narrative on my new towers. Last week **Al Arrison KB2AYU** mounted the C31XR on the HG-52SS tower. Present for ground crew were **Tom Gorman KE2ES, Ron Newman KE2DPO, & Rosemary Newman KE2DPP**. Thanks to all of you who showed up to lend a hand (& gather info for your own future tower install!).

Last year I was finally able to plan for restoring and installing my EZWay RBX-70 crankup/tiltover (obtained from a now SK locally, who installed it, maintained it, but never put a Yagi on it, only a couple dipoles, so never stressed). This model has the tripod base arrangement (a central larger pole is bolted to 2 anchor bolts in the cement base, as well as 2 legs bolting near the top and connecting to one anchor bolt each). The tower needed new cabling, and replacement of the sheaves that route the cables. First order of business was to use a slightly larger (stronger) cable, so replaced with appropriate sheaves, and all went well.

The manual crankup winch was replaced with an electric hoist (Harbor Freight model rated at 2000lbs, and also used on the HG-52SS tower refurbish at the recommendation of KF7P Metalworks). The tiltover winch was replaced with a new manual winch. I may search for an electric winch there (it was incredibly difficult to manually crank the winch from full horizontal tower w/antenna pulling it up to vertical position). The tower tiltplate hinge is at the 8ft level.

For easy access to mount the antenna, an NN4ZZ Tiltplate was purchased. This keeps the Yagi horizontal as the tower tilts over - a lifesaver and means working on the antenna/rotator etc at 3-4ft level off the ground! The hole was dug and cement poured over summer 2023, was not able to finish it up until this summer.

An XM-240 Cushcraft 2 el 40m Yagi is on top, turned by a newly refurbished T2X rotor (by Rotor Guru W2HP).

The 3 tower sections are each 25ft, the separately mounted rotor cage/thrust bearing assembly adds an additional 5ft, Tiltplate mounts a couple feet above the thrust bearing. So the nested height of the antenna is around 35ft. I opted for an antenna with a relatively low wind load (XM-240 is 4.5sq ft).

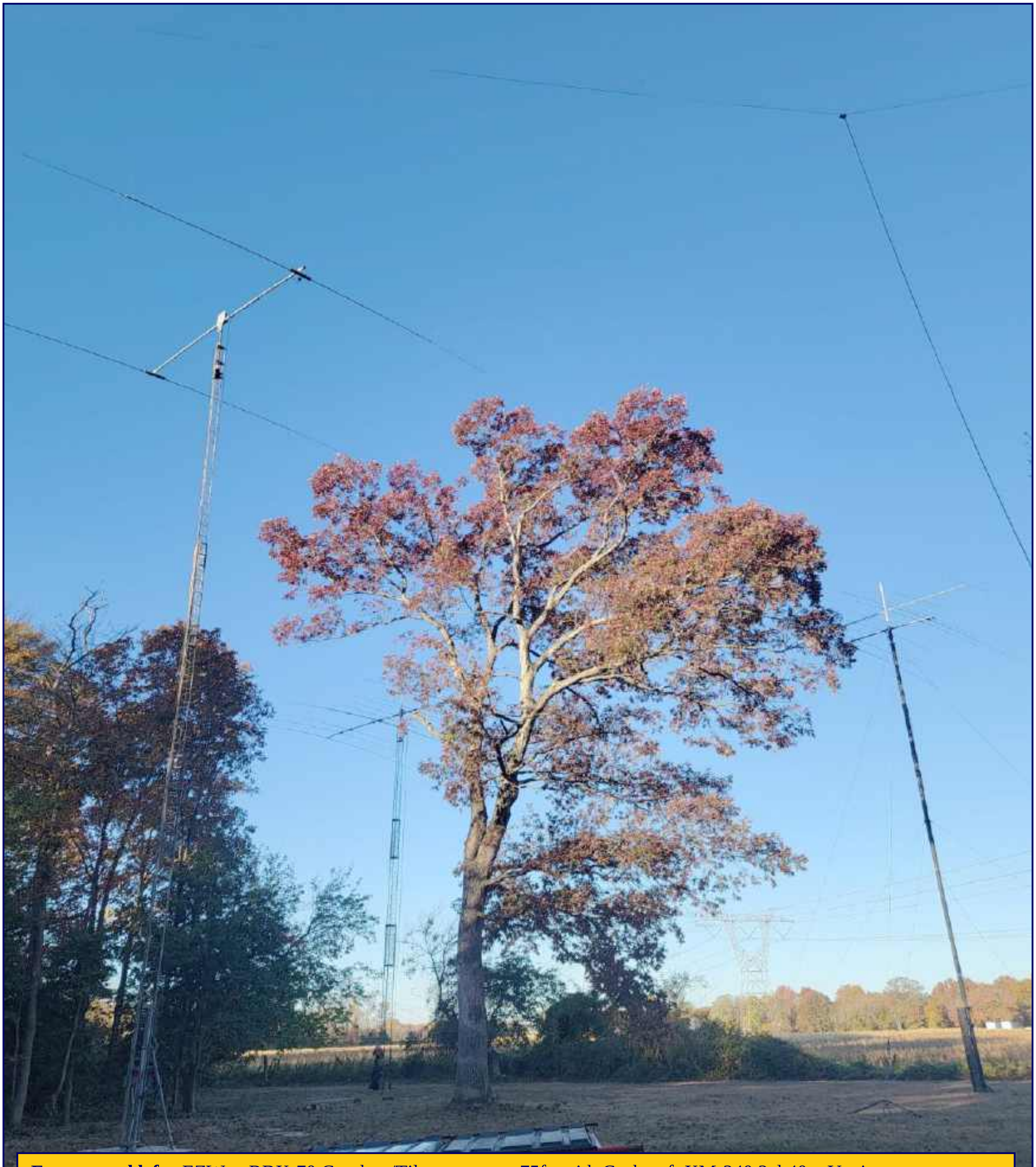
The most difficult part was finding accurate plans of this particular model. There were at least 2 additional sheaves, obviously never used, and one set of plans supposedly for this model found online contained cable routing that proved to be totally incorrect for this model. Since this was a 3 section model, I followed the cabling scheme on the HG-52SS, and that worked fine, the existing used sheaves lining up perfectly.

OK, On To Tower #2 :

At the same time, I had purchased a nice used Hygain HG-52SS crankup (thanks Sheldon K2MEN). This was in excellent condition, and I replaced the cables with new ones since it sat in my yard for several years (yes, sometimes these plans take a long time to materialize). I bought the KF7P Metalworks Hygain hoist shelf (precut with mounting holes for the HG-52SS, as well as pre-drilled mounting holes for the Harbor Freight hoist mentioned above). The base went in back in July, and the tower was raised upright and mounted at that time. The antenna for that tower is a Force 12 C31XR, 31ft boom, 14el tribander. This was just mounted last week. We discovered a number of limbs on several trees that we believed to be out of the way had to be removed so the Yagi could fully turn. An Orion 2300 (pre-M2 model) is the rotor. The tree work took 2 days, and was finished Monday.

I have a number of pictures of the different stages and completion. Available on request.

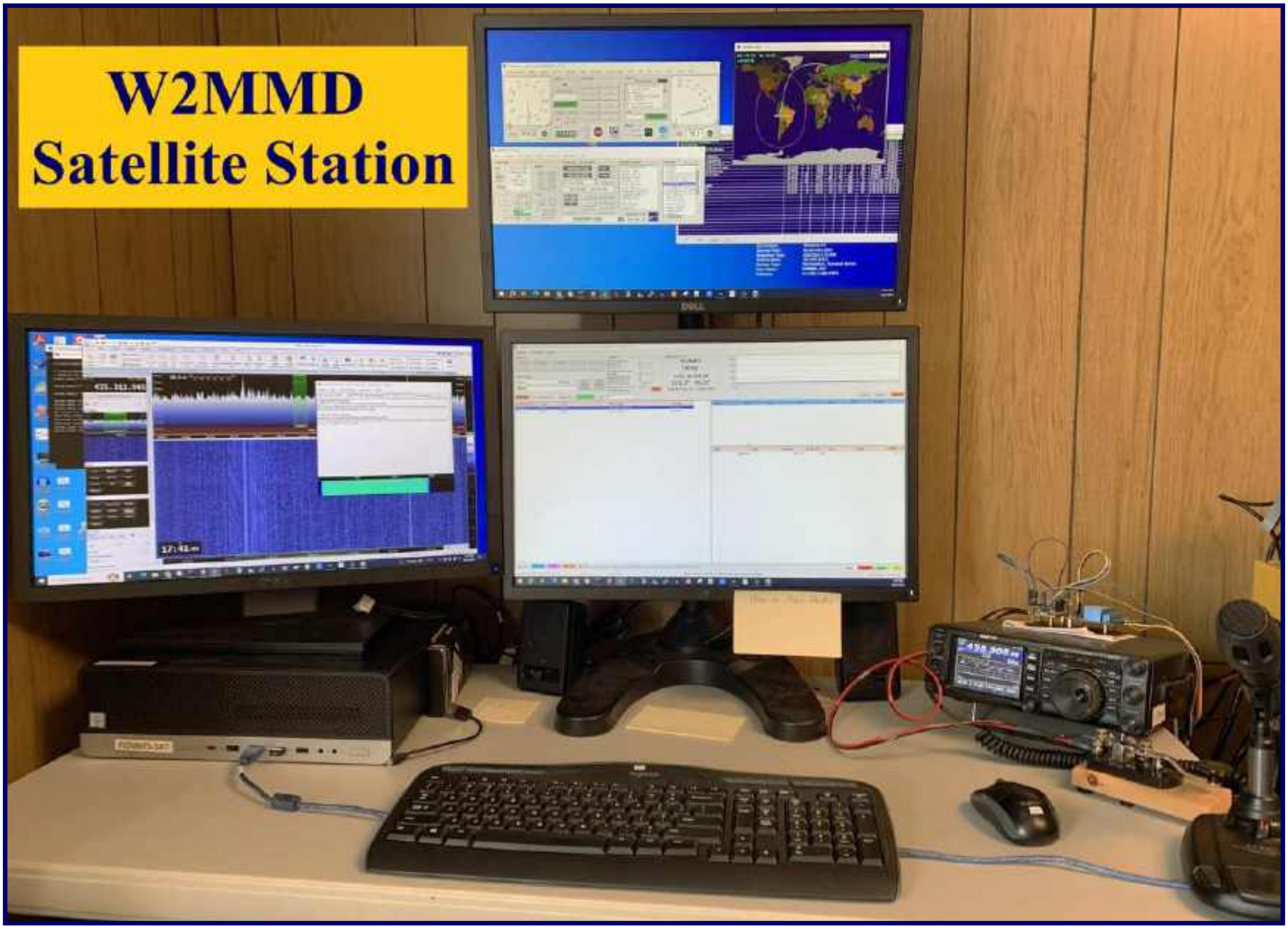
New Towers Installed At AB2E QTH - Continued on page 43



Foreground left : EZWay RBX-70 Crankup/Tiltover tower, 75ft, with Cushcraft XM-240 2el 40m Yagi on top.
Rear left : Hygain HG-52SS crankup tower, Force 12 C31XR at 55ft.
Right of tree : Existing AB-577 military mast (same as our FD mast), Force 12 C3SS tribander at 52ft, M2 6M5X 6m Yagi at 56ft.

Another FREE Clubhouse Resource Available To All Club Members

Training May Be Required : See Jon Pearce, WB2MNF For Details



Membership Badges Ready For Pick-up.

They can be picked up at the W2MMD Clubhouse or at the monthly General Membership Meetings

Jim Beury, KE2DRN
Dave Danichkin, KD2UXC
Jim Foster, W3JNF
Deirdre Hebert, AD2GQ
Ronald Jackson, KE2CJB
Bob Jensen, KC3WWL
Ben Johnson, NE2R
Calvin Keller, N2YMS
John McGonigle, KC2ZJX
Jack Snyder, AI2D

Gloucester County Amateur Radio Club
General Membership Meeting Minutes
Wednesday, October 2, 2024

Meeting opened @ 1900 Hours by President Jon Pearce, WB2MNF with the Pledge of Allegiance to the Flag

Attendance :

- **In-person : 45**
- **Via Zoom : 14**

Visitors :

- **Ralph Verdi, KC2WVM**
- **Bob Nelson, K2QPN**

New Members :

- **Joseph Albanese, KE2DYX**
- **Scott Dantis, AA2SD**
- **Michael Dornisch, KD2IFY**
- **Matthew Duffield, KE2ECE**
- **James Griggs, KE2COX**
- **Josiah Jarvis, KE2BRD**
- **Paul Johnston, KC3VTI**
- **Conor McCaffrey, KD2KJX**
- **Dennis McManus, W3IMA**
- **Craig Metzger, Associate**
- **Paul Pasternak Jr, N3FTO**
- **Rev. Fr. Jacek Stefanski, N2FCH**

Announcements :

- When operating as W2MMD send ADIF logs to **Jim Wright N2GXJ** for upload to LoTW.
- GCARC Holiday Dinner at Pfeiffer Community Center 12/13/2024.
- New 1296 MHz EME Dish for Clubhouse on the way.

Upcoming Events :

- Tech Saturday 10/5/24 “Overview of EME Operating” @ 9AM
- Simulated Emergency Test (SET) 10/5-10/6/2024
- Board of Directors Meeting 10/16/2024 @ 7PM
- Dinner at the Clubhouse 10/23/2024 @ 6PM

Recent Club Activities :

- Meshtastic for personal emergency communications
- Ham radio for personal emergency communications
- SDR radio overview

October 2024 General Membership Meeting Minutes - Continued on page 46

October 2024 General Membership Meeting Minutes - Continued from page 45

Business Meeting :

Minutes of the September 2024 business meeting as published in CrossTalk were approved by voice vote of members present.

Treasurer's Report :

- **2024 Operating Profit and Loss**
    - Operating Revenue : $21,801.80
    - Operating Expenses : $8,575.14
    - Net Operating Income : $13,226.66

- **Hamfest Income and Expenses**
    - Income : $6,400
    - Non-operating expenses (Loss) : $1,771.13
    - Net : $4,628.87

Remarks :

- Treasurer's report approved by motion and voice vote of members present.

Gloucester County Amateur Radio Foundation Report :

- Income $14,044.77
- Expenses $12,244.89
- Net $1,799.88

Clubhouse Report :

- **Frank Romeo N3PUU** discussed tentatively scheduled tower base excavation on 10/19/2024
- Help needed to do some hand-finishing of dirt work.
- Volunteers needed to help unload rebar on 10/4/2024

Technical Committee Report :

- STEM sessions have started at Woodruff School.
- 1st session - Overview of balloon lift.
- 2nd session - Soldering training
- 3rd session - Balloon and tracker construction.
- There was a GCARC Balloon launch 9/15/2024.

DX and Contests Report :

- **Tony Starr K3TS** reported on upcoming contests for October 2024, details in CrossTalk.

Public Service Report :

- **Bob Keogh KD2NEC** discussed Red Cross and ARES communications flow along with the upcoming Simulated Emergency Test (SET).

Education Committee Report :

- **Chris Prioli AD2CS** reported on the progress of the current licensing classes.

October 2024 General Membership Meeting Minutes - Continued on page 47

October 2024 General Membership Meeting Minutes - Continued from page 46

Old Business : None

New Business :

- Reauthorization of Club Grounding and VHF Tower funds motion passed by voice vote of members present.
- Nomination for 2025 Club Officers, first reading.
    - **Jon Pearce WB2MNF, President**
    - **Ron Block NR2B, Vice President**
    - **John O'Connell K2QA, Treasurer**
    - **John Zaruba K2ZA, Recording Secretary**
    - **Mike Resnick N2WOQ, Corresponding Secretary**
    - **Jeff Garth WB2ZBN, Director**
    - **Frank Romeo N3PUU, Director**
- **Jerry Barnish K2EAB** reported on the status of the Battleship USS New Jersey and is soliciting volunteers to join the Battleship New Jersey Radio Club.

Presentation : "Computer Industry Founding and Altair 8800" - Bob Nelson, K2QPN

Meeting adjourned @ 1952 Hours

Respectfully Submitted,
John Zaruba Jr, K2ZA,
Recording Secretary

Zero Prostate Cancer Run/Walk
Sunday, November 3, 2024

Valenzano Winery
1090 Route 206
Shamong, NJ
https://bit.ly/40qkYxM

NTS Resources

The National Traffic System® (NTS) is a network of Amateur Radio operators who move information during disasters and other emergencies. General messages offering well wishes also move through the NTS to help test the system and to help Amateur Radio operators build traffic handling skills. While the NTS is primarily set up to serve the United States and Canada, it is possible to move traffic internationally through the NTS through various local, regional, area, and international network connections.

- **NTS 2.0 : https://nts2.arrl.org**
- **NTS Manual : https://www.arrl.org/nts-manual**
- **NTS Methods and Practices Guidelines Table of Contents : https://www.arrl.org/table-of-contents-nts-methods-and-practices-guidelines**
- **Handling Instructions : https://nts2.arrl.org/hx-handling-instructions**
- **Numbered Texts : https://nts2.arrl.org/numbered-texts**
- **Form Encoding Rules for Form : https://nts2.arrl.org/form-encoding-rules-for-forms**

Gloucester County Amateur Radio Club
Board of Directors Meeting Minutes
Wednesday, October 16, 2024

Meeting opened @ 1900 Hours by President Jon Pearce, WB2MNF

Attendance :

- **President Jon Pearce, WB2MNF : Present**
- **Vice President Ron Block, NR2B : Present**
- **Treasurer John O'Connell, K2QA : Present**
- Recording Secretary John Zaruba Jr, K2ZA :
- **Corresponding Secretary Mike Resnick, N2WOQ : Present**
- **Director (2022-2024) Jeffrey Garth, WB2ZBN : Present**
- **Director (2022-2024) Frank Romeo, N3PUU : Present**
- **Director (2023-2025) Chris Prioli, AD2CS : Present**
- Director (2023-2025) James Wright, N2GXJ :
- **Director (2024-2026) Al Arrison, KB2AYU : Present**
- **Director (2024-2026) Bill Price, NJ2S : Present**
- Trustee (2021-2024) Carl Wittig, N2CRW :
- Trustee (2022-2025) Charles Lanard, KD2EIB
- Trustee (2023-2026) Sheldon Parker, K2MEN :
- Trustee (2024-2027) Len Rust, W2LJR :
- **Member Bruce Canino, KD2LBU : Present**
- **Member Karl Frank, W2KBF : Present**
- **Member Diane Amico, W2WHD : Present**

Motion to approve previous meeting minutes passed by voice vote of Club officers present.

NEW MEMBER APPLICATIONS :

- **James Bishop, Williamstown, NJ**
- **Joseph DiCastelnuovo KD2RPD, Woodbury, NJ**
- **Max Heitman W1MAX, Saylorsburg, PA**
- **Michael Libonati WA2ACV, Barnegat, NJ**
- **Eric Serfass, Effort, PA**
- **Clarence Serfass, Effort, PA**
- **Ralph Verdi KC2WVM, Deptford, NJ**

Motion to approve new members passed by voice vote of Club officers present.

TREASURER'S REPORT :

- **Income : $22,144.80**
- **Expense : $10,361.39**
- **Net : $11,783.41**

Detailed financial statements are available for member review upon request. Motion to approve the treasurer's report passed by voice vote of Club officers present.

October 2024 Board of Directors Meeting Minutes - Continued on page 49

October 2024 Board of Directors Meeting Minutes - Continued from page 48

CLUBHOUSE REPORT :

- **Al Arrison KB2AYU** reported the heat tape will be energized soon to prepare for colder weather.
- **Frank Romeo N3PUU** discussed cable routing and tower base logistics info. He also discussed getting GM approval for furniture construction funding (motion for same approved by voice vote of Club officers present).
- **Bill Price NJ2S** reported on rodent prevention strategies.
- Group discussion of volunteer labor and insurance coverage. Motion to make tower base excavation volunteers Associate Club members for insurance purposes passed by voice vote of Club officers present.

TECHNICAL COMMITTEE :

- **Jon Pearce WB2MNF** discussed balloon launches, STEM classes at Woodland School going well.
- Microwave EME dish has not arrived yet.

PROGRAMS & ACTIVITIES COMMITTEE :

- Holiday Dinner : Motion to approve venue move from Pfeiffer Center to Mantua Masonic Lodge on Friday, December 6, 2024 approved by voice vote of Club officers present.
- Discussion led by **Ron Block NR2B** on upcoming General Membership Meeting programs.
- Fox hunt set for November 9th, details to follow.
- Dinner at the Clubhouse cancelled for November due to proximity to Thanksgiving.

EDUCATION COMMITTEE :

- **Chris Prioli AD2CS** reported on licensing class progress and testing format.
- Chris reported on Buena Township Emergency Management request to attend GCARC license classes.

OLD BUSINESS :

- 2025 Officer's slate approved at last GM meeting will be read again in November per Club constitution.

NEW BUSINESS :

- Discussion of 2025 Hamfest date and reserving with 4H. Motion to establish Sunday, September 7, 2025 as the next Hamfest date approved by voice vote of Club officers present.
- Discussion of putting a Club sign out by Route 77, must approach 4H first.
- Discussion of GCARC TechNet Zoom Forum scheduling.

NETS :

- **2 Meter Net : September 2024 - Tuesday Average : 7 Check-ins, Thursday Average : 7 Check-ins**
- **10 Meter Net : Tuesdays and Thursdays at 1930 Hours**
- **40 Meter Net : Mondays and Thursdays at 1930 Hours**

Meeting adjourned @ 2007 Hours

Respectfully Submitted,
John Zaruba Jr, K2ZA
Recording Secretary

To Be Added To The DX HONOR ROLL,
Please contact Ernest Kraus, KD2EAV
meanddelcanotc@verizon.net

Name/Callsign	DXCC
Bill Grim, W0MHK	352
Dave Strout, W2YC	349
Edward De Fonzo, W2DE	339
Darrell Neron, AB2E	336
Bob Pantazes, W2ARP	290
John Hill, W2HUV	271
Gary Castellini, N2IEC	270
Vinnie Sallustio, N4NYY	268
Sheldon Parker, K2MEN	258
Jim Wright, N2GXJ	251
Ken Denson, WB2P	248
Tony Starr, K3TS	242
Dennis Sandole, K2SE	231
Howard Marder, WA2IBZ	156
Eric Morris, N2BRJ	154
Art Strong, KA0WS	154
Steve Farney, W2SEF	147
Phil Nunzio, WA3RGY	144
Rich Subers, W2RHS	140
Bart Kleczynski, AC2PT	124
Marc Federici, WM2Y	117
Ben Johnson, NE2R (WB2GUK)	116
Chuck Capasso, WB2PGE	104
Harry Strahlendorf Jr, W3DNQ	103
Jim Clark, KA2OSV	87
Lee Marino, N2LAM	71
Updated As Of 10/20/2024	

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Don't forget to turn your clock back. I'm going to turn mine back to when I was 20.
JWagner
www.maxine.com
10-26

Hmm...It's Saturday and you want to know if someone is at the Clubhouse? Why not call and find out! What!!!

W2MMD Clubhouse : (856) 244-6914

(Please, no free solar panel calls!)

November Birthdays

Congratulations To Our Members Who Are Celebrating A Birthday This Month

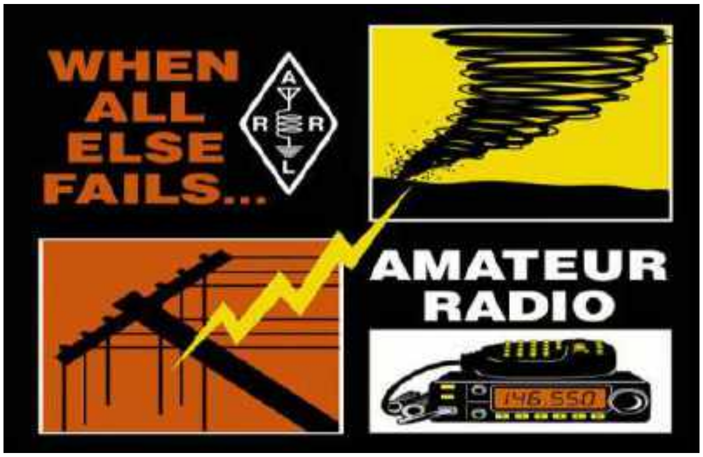
Joe Albanese, KE2DYX
Matt Carango, N3QB
Norm Coltri, K2NRC
Bill DeCuzzi, KD2KZW
Bob Durham, W2RAD
Bob Harrison, WA3KOL
Bob Keogh, KD2NEC
Ernest Kraus, KD2EAV
Chuck Lanard, KD2EIB
Howard Marder, WA2IBZ
Earl Moore, KC2NCH
Miroslaw Radon, KE2AEW
Cory Sickles, WA3UVV (President 1993)
Rich Subers, W2RHS
Marty Wilt, W2ILT

In Memoriam : November Birthdays

Henry Basch, N2DJN
Alva Bishoff, W8JJG (Charter Member)
Peter Butler, WB2B
Glenn Farnsworth, K2EHM
Robert Fields, KC6AOH
John Fisher Jr, K2JF (President 1988)

Elwood "Woody" Frantz Sr, K4HKU
(President 1960, Charter Member)

Ernest Garside, WA2TDI
Russel Glans, N2ASV (President 1983)
George Hankins, N2CFW
Charles Jenkins III, W2OGZ
Frank King, WA2WGA
Andrea Logan, KB2ZWK
Ray Martin, W2RM (President 1979)
Eleanor Mattison, N2JXS
James McDonald Sr, N2AIV
Robert Nicotera, KB2ERL
Hugh Turnbull, W3ABC
Edward Vickner Jr, K2ZE
Paul Walton, W2YNR (President 1964)



So you find our website confusing, can't find anything, Well So Do I!!

I have created a page *(What, Not Another Page!!)* called "Quick Links"

On this page you will find "Buttons" to some the most popular pages
I will add more as time goes on, but I hope this helps your journey navigating through your Club Website!
https://gloucestercountyarc.weebly.com/quick-links.html

ARRL Digital Contest 2024

June 1, 2024

Call : AB2E
Operator (s) : AB2E
Station : AB2E

Class : SO1R-8 LP
QTH : SNJ
Operating Time (hrs) : 3
Location : USA

Summary :

Band	QSOs
40 :	2
20 :	18
Total :	20

Total Score : 131

Club : Frankford Radio Club **77**

Comments :

Rig : Elecraft K3
Antennas :
40m dipole @ 75ft
10,15,20m Force 12 C3s Tribander

Well, came down Friday with something resembling the flu (this, after getting my flu shot, pneumonia vaccine, MRSV vaccine, etc). Sometimes one gets through the cracks, go figure. Slept 16 hours from Fri early evening through noon Sat. Still felt terrible, no hunger, 101 fever finally broke. Couldn't stay in the chair for long and gave up after a couple hours. Thanks for the Q's. I enjoy digital but still need to learn more to effectively contest with it.

73 Darrell AB2E

Contest : ARRLIDC

Band	Mode	QSOs	Pts	Mul	Pt/Q
7	FT4	2	4	0	2.0
14	FT4	10	96	0	9.6
14	FT8	8	31	0	3.9
Total	Both	20	131	0	6.6

Score : 131
1 Mult = 1.0 Q's

Kentucky QSO Party 2024

June 1, 2024

Call : WB2PJH
Operator (s) : WB2PJH
Station : WB2PJH

Class : SO Fixed LP
QTH :
Operating Time (hrs) : 2
Location : Out of State/Province

Summary :

Band	CW Qs	Ph Qs	RTTY Qs	
40 :	3			
20 :	6			
Total :	9	0	0	Mults : 6

Total Score : 316

Club : Frankford Radio Club **78**

West Virginia QSO Party 2024

June 15, 2024

Call : WB2PJH
Operator (s) : WB2PJH
Station : WB2PJH

Class : Single Op HP
QTH :
Operating Time (hrs) : 1
Location : Out of State/Province

Summary :

Band	CW Qs	Ph Qs	Dig Qs	
40 :	2	1	0	
Total :	2	1	0	Mults : 3

Total Score : 115

Club : Frankford Radio Club **79**

Alabama QSO Party 2024

July 27, 2024

Call : WB2PJH
Operator (s) : WB2PJH
Station : WB2PJH

Class : SOMixed HP
QTH :
Operating Time (hrs) : 2
Location : Out of State/Province

Summary :

Band	CW Qs	Ph Qs		
40 :	2			
20 :	8	1		
Total :	10	1	CW Mults : 6	PH Mults : 1

Total Score : 154

Club : Frankford Radio Club **81**

IARU HF Championship 2024
July 13, 2024

Call : AB2E
Operator (s) : AB2E
Station : AB2E

Class : SOAB (A) Mixed HP
QTH : SNJ
Operating Time (hrs) : 12
Location : USA

Summary :

Band	CW Qs	Ph Qs	Zones	HQ Mults
80 :	36	0	7	12
40 :	44	24	16	28
20 :	567	72	35	35
15 :	167	43	29	33
10 :	0	3	2	1
Total :	814	142	89	109

Total Score : 729,036

Club : Frankford Radio Club **80**

Comments :

Rig : FTDX-9000D/OM Power 2000A+
Antennas :
80m CW dipole @ 85ft
40m dipole @ 80ft
10m/15/20 C3S Force 12 tribander @ 52ft
Operating time : 12 hours

Wow, starting out I had a few work/family obligations Sat morning. Was able to start the contest around 11A local time. Condx were already great on 15m at my start, checking 10, it was dead. Stayed on 15 for the time I had. Had a couple more family things to attend to late afternoon, so it was touch and go.

At 0200UTC I got back on, did very well picking up the HQ mults. 20m was still very good, and proved to be the best band overall, day and night.

Went to 40 and 80 to pick up mults. Went back to 20m around 0400 and it was wide open to EU, as well as some Asia (E2, BD, 9N, JA, all in the log). Sustained rates of 150-200/hr until 0800UTC when I QRT'd for bed (had a tough sched with lack of sleep the previous 2 nights which impacted things).

Starting the contest, I had no clear goals, but at 0400 I set a goal of 1000Qs, which I almost made (954).

The **live scoreboard** (**www.contestonlinescore.com**) continues to inspire and motivate! Congrats to my immediate competitors who ran neck and neck, back and forth as the contest progressed.... WA3AAN Grant, N3RD Dave,AA3R Fred, and several others.

73 & thanks for the Qs!
Darrell AB2E

ARS Flight of the Bumblebees 2024
July 28, 2024

Call : W2TEF
Operator (s) : W2TEF
Station : W2TEF

Class : Bumblebee QRP
QTH : Glassboro NJ
Operating Time (hrs) : 3.5
Location : USA

Summary :

Band	QSOs	Bumblebees
40 :	22	17
20 :	3	2
Total :	25	19

Total Score : 1,425

Club : Frankford Radio Club **82**

Comments :

QTH = WWFF KFF-5883, Glassboro Wildlife Management Area (NJ: FM29lq). QRP-Labs QMX into an EFHW resonant on 20m, 40m. Got no responses on 20m (hunted 3). Good responses on 40m for a daytime activation. TU es 73!

Contest : IARU

Band	Mode	QSOs	Pts	ITU	HQ	Pt/Q
3.5	CW	36	82	7	12	2.3
7	CW	44	118	11	17	2.7
7	LSB	24	54	5	11	2.3
14	CW	567	2,445	30	24	4.3
14	USB	72	250	5	11	3.5
21	CW	167	599	23	17	3.6
21	USB	43	123	6	16	2.9
28	USB	3	11	2	1	3.7
Total	Both	956	3,682	89	109	3.9

Score : 729,036
1 Mult = 4.8 Q's

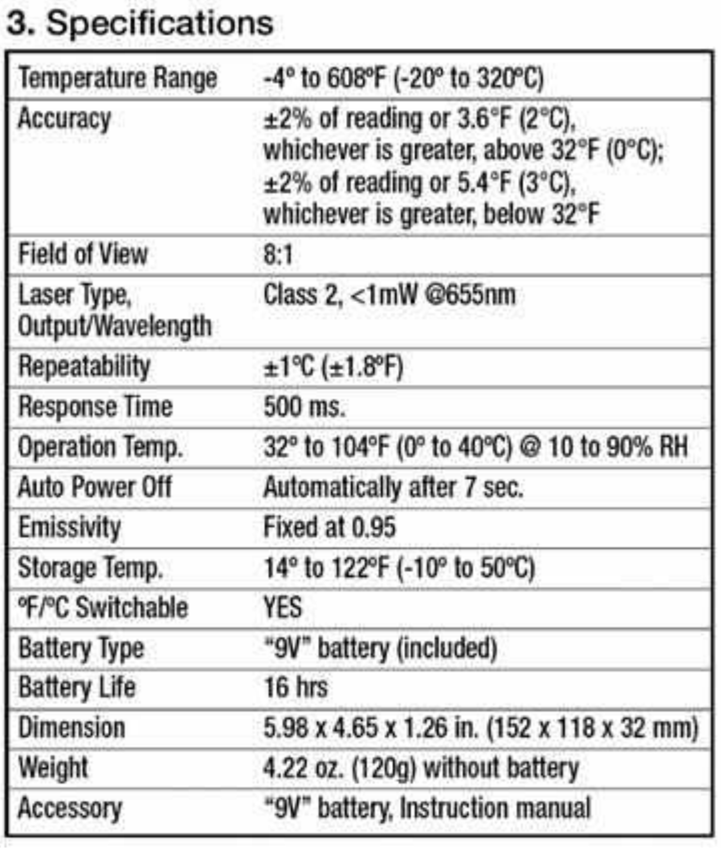
Electronic Tool Tip #10 - Infrared Thermometer

By Chris Prioli, AD2CS - chris@ad2cs.com - www.ad2cs.com

From time to time, I will encounter an electronic device that is not functioning quite as it was designed. For example, I might come up against a radio in which one of the amplifier stages is ***kaput***, which is causing a more generalized failure to be evident. Not being one who takes kindly to ***"busy"*** work, I am usually interested in a reliable shortcut that will help to resolve the issue at hand. One such ***"shortcut"*** is a pistol-grip infrared thermometer.

I chose the ***IRT207 from General Tools (Figure 1)*** mainly because it was what was in stock at the neighborhood Lowe's store when I was looking to buy one of these devices. That fact notwithstanding, I would now make that same buying decision even when considering a varied group of candidates. The IRT207 is compact, easy to use, goes almost forever an a single 9-volt snap-top battery, and displays its readings clearly on a backlit LCD panel.

The ***operational specifications for the IRT207 are shown in Figure 2***. Note that the field of view is fixed at a ratio of 8:1, which means that the scanned surface area of the target object will grow at that ratio. For example, at 8 inches from the working face of the thermometer, the scanned area target spot will have a diameter (ø) of one inch. At a 16 inch distance, that scanned area ***"spot"*** will now have grown to ø 2", and then to ø 3" at a 24 inch distance from the thermometer to the target surface.



3. Specifications

Temperature Range	-4° to 608°F (-20° to 320°C)
Accuracy	±2% of reading or 3.6°F (2°C), whichever is greater, above 32°F (0°C); ±2% of reading or 5.4°F (3°C), whichever is greater, below 32°F
Field of View	8:1
Laser Type, Output/Wavelength	Class 2, <1mW @655nm
Repeatability	±1°C (±1.8°F)
Response Time	500 ms.
Operation Temp.	32° to 104°F (0° to 40°C) @ 10 to 90% RH
Auto Power Off	Automatically after 7 sec.
Emissivity	Fixed at 0.95
Storage Temp.	14° to 122°F (-10° to 50°C)
°F/°C Switchable	YES
Battery Type	"9V" battery (included)
Battery Life	16 hrs
Dimension	5.98 x 4.65 x 1.26 in. (152 x 118 x 32 mm)
Weight	4.22 oz. (120g) without battery
Accessory	"9V" battery, Instruction manual

The IRT207 is selectable as to °C or °F, managed by a push of the left-hand switch on the thermometer display panel. In addition, the aiming laser can be selectively active or inactive, again by a mere button press, this time to the right-hand switch on the display panel of the thermometer.

To use the IRT207, simply point the sensing end of the thermometer towards the surface or object of interest and pull the trigger, holding the trigger until you register the temperature of the target. The aiming laser can be used to help ensure that the unit is sampling the correct or desired point. When the trigger is released, the temperature displayed will be ***"held"*** in the display until the display blanks out, which event will occur at about seven seconds after trigger release.

An infrared thermometer is extremely useful in diagnosing weak or under-performing semiconductor devices. Such devices will generally run colder than their neighboring devices. Conversely, semiconductors that are flowing excessive current will generally run hotter than their neighbors.

Infrared Thermometer - Continued on page 55

Infrared Thermometer - Continued from page 54

Excess current through any resistance will produce heat. This heat can be used to locate and identify circuit problems.

I am ***not*** saying that the thermometer is some sort of magic wand that will solve all of your diagnostic woes. I ***am*** saying, however, that the infrared thermometer is a valuable asset in your diagnostic tool set, and that thermal exploration can be a key process in fully inspecting a piece of electronic equipment.

This thermometer is available online from Amazon, at a price of $37.99 (USD) plus shipping if you are not an Amazon Prime member. Of course, the government has to get its share, so tax will also be applied. Point your browser to **https://www.amazon.com/General-Tools-IRT207-Temperature-Detector/dp/B00377BSU4** if you want to investigate this item for yourself.

Word to the Wise : Off Time

Periods of non-operation during a contest. Operation includes the activity of listening, so listening during off-times is not allowed.

Volunteer Monitor Program Report - August 2024

The Volunteer Monitor (VM) Program is a joint initiative between ARRL and the FCC to enhance compliance in the Amateur Radio Service. This is the August 2024 activity report of the VM Program.

- Licensees in New York, Virginia, and Georgia were issued advisory notices concerning excessively wide signals and splattering, resulting in interference to communications on 14.300 MHz. The Virginia and Georgia stations were also cautioned that the issue would have to be resolved before their licenses would be renewed.
- A licensee in Pennsylvania received an advisory notice concerning one-way transmissions and deliberate interference to Field Day operations on 7.200 MHz. A licensee in Georgia received an advisory notice for deliberate interference to the Jarvis Island N5J DXpedition operating CW on 3.527 MHz.
- An operator in California received an advisory notice concerning operation of a beacon on 28.244 MHz under an expired license. A licensee in Virginia received an advisory notice concerning deliberate interference on 3.933 MHz and was cautioned that the matter would have to be resolved before his license would be renewed.
- A Technician-class licensee in Georgia received an advisory notice concerning SSB operation on 40 meters. Technicians have no voice privileges on 40 meters.
- A licensee in Georgia received an advisory notice about causing deliberate interference to a DX station while he was acting as a net control station on 14.290 MHz.
- A good operator commendation was issued to a licensee in Illinois for exemplary operation on a 2-meter repeater, assisting new licensees with operating procedures and explaining special event stations.
- A volunteer monitor alert was issued on August 6 for interference from an experimental high-speed stock-trading station on 20 meters. Information gathered from the alert resulted in an FCC referral.
- The VM Program Administrator participated in one FCC meeting.

The totals for July 2024 monitoring were 1,516 hours on HF frequencies, and 2,857 hours on VHF frequencies and above, for a total of 4,373 hours.

Thanks to Volunteer Monitor Program Administrator Riley Hollingsworth, K4ZDH

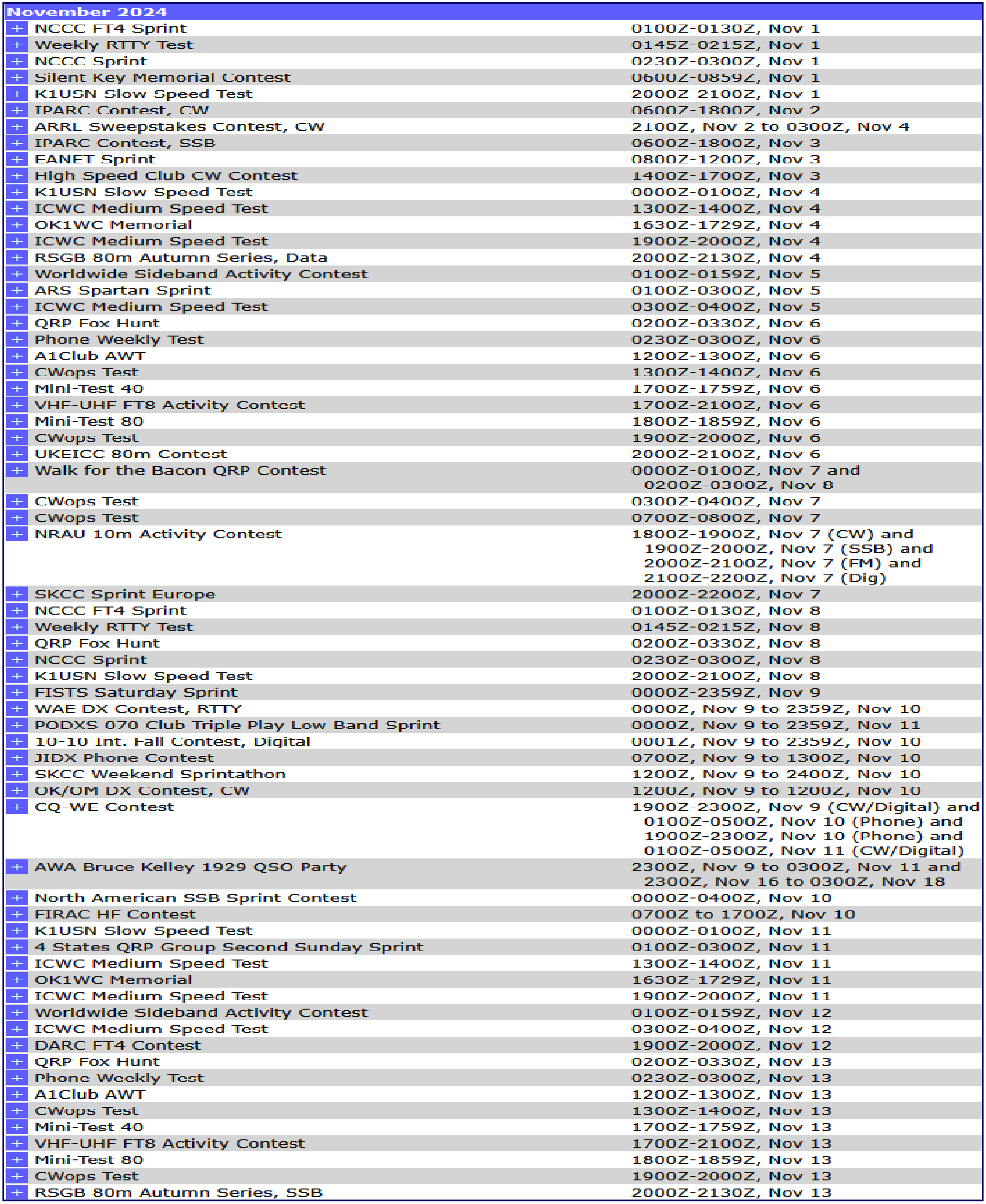
Announced DX Operations

www.ng3k.com/Misc/adxo.html

From The Shack of Bill Feidt, NG3K : www.ng3k.com

November						
2024 Nov01	2024 Nov15	**Cocos Keeling**	**VK9CV**	OK6DJ	DXW.Net 20240630	By OM5ZW OM4AYL OK6DJ OK2ZA OM3PC OM4MM OM4MW VK5GR OM5RW; 160-10m; SSB FT9 RTTY QO-100
2024 Nov02	2024 Nov22	**St Helena**	**ZD7**	LoTW	DXW.Net 20241004	By JM1GDA as ZD7G and JF3SFU as ZD7SFU; 160-10; mainly FT8, some SSB and slow CW
2024 Nov02	2024 Nov09	**Maldives**	**8Q7TR**	OE1TRI	DXW.Net 20240925	By OE1TRI fm Kagi I; HF; SSB FT8; holiday style operation
2024 Nov03	2024 Nov09	**Honduras**	**HR9** NEW	LoTW	TDDX 20241017	By K6VHF as K6VHF/HR9 fm Roatan I; 80-6m; SSB CW RTTY FT8; 100w; QSL via K6VHF (B/d)
2024 Nov05	2024 Nov12	**Cayman Is**	**ZF2KM**	LoTW	OPDX 20240911	By W9KM fm Grand Cayman I; HF; CW + digital
2024 Nov06	2024 Nov16	**St Kitts & Nevis**	**V47JA**	LoTW	W5JON 20240124	By W5JON fm Calypso Bay; 160-6m; SSB FT8; yagi, verticals; QSL also OK via W5JON direct
2024 Nov07	2024 Nov18	**Reunion**	**FR**	LoTW	TDDX 20241010	By F5SGI as FR/F5SGI; 40-10m; CW; automatic QSL via bureau
2024 Nov07	2024 Nov24	**South Cook Is**	**E51SGC**	LoTW	LZ1GC 20240816	By LZ1GC LZ5QZ fm Rarotonga I (IOTA OC-013); 160-6m, focus on 160 80 60m; CW SSB FT4 FT8 RTTY; 3 stations; QSL via E51SGC OQRS or LZ1GC (B/d)
2024 Nov08	2024 Dec12	**Fiji**	**3D2TP**	PA3CBH	DXW.Net 20240905	By PA3CBH fm Suva; HF; SSB CW; spare time operation
2024 Nov11	2024 Nov16	**French Polynesia**	**FO**	LoTW	DXW.Net 20240925	By N5LCP as FO/N5LCP fm Bota Bora I (IOTA OC-067); 20 15m; SSB FT8; QSL via N5LCP
2024 Nov11	2024 Nov20	**Sao Tome & Principe**	**S9Z**	LoTW	TDDX 20240709	By N4XP 5B4AQN CT1BOL CT1DVS CT1EEB CT1END HI8RD I8NHJ KH7U KJ7KOJ K0IR K3VN N2WB N6MZ WB4JTT W7YED; 160-6m; SSB CW + digital, + 432 EME; hex beams; tall verticals; QSL via Club Log OQRS
2024 Nov14	2024 Nov20	**Palau**	**T8**	LoTW	DXW.Net 20240909	By JH1OLB as T88DT and JH1FFW as T88RC; HF; SSB FT8
2024 Nov15	2024 Nov23	**French Guiana**	**FY**	LoTW	DXW.Net 20240926	By WE9G as FY/WE9G fm Matoury; 80-6m, incl 60m; mainly FT8 FT4, some SSB CW; QSL via Club Log OQRS or WE9G (B/d)
2024 Nov15	2024 Nov25	**Falkland Is**	**VP8G**	LoTW	DXW.Net 20241013	By PG5M; 40-6m; mainly CW FT8; QSL via M0OXO
2024 Nov15	2024 Dec04	**Rotuma**	**3D2Y**	M0OXO	DXW.Net 20240501	By W6IZT K4NHW M0SSDV KD9LSV LY7J W2FQ; 160-6m; CW SSB FT8; 5 stations; QRV for CQWW DX CW
2024 Nov16	2024 Nov29	**Wallis & Futuna**	**FW7AA**	LoTW	DXW.Net 20240920	By W7YAQ K7AR fm Wallis I; 160-6m; 2 stns; QSL via W7YAQ; QRV for CQWW DX CW
2024 Nov19	2024 Nov26	**Chatham Is**	**ZL7YL**	LoTW	OPDX 20240824	By ZL4YL; HF; QSL via Club Log OQRS
2024 Nov19	2024 Nov29	**St Martin**	**FS**	LoTW	TDDX 20240905	By KC9EE as FS/KC9EE fm Orient Village; HFbernie@dailydx.com
2024 Nov25	2024 Dec06	**Tonga**	**A35GC**	LoTW	LZ1GC 20240816	By LZ1GC LZ5QZ fm IOTA OC-049; 160-6m, focus on 160 80 60m; CW SSB FT4 FT8 RTTY; 3 stations; QSL via E51SGC OQRS or LZ1GC (B/d)
2024 Nov30	2024 Dec02	**Fiji**	**3D2NB**	LoTW	DXW.Net 20240920	By W7YAQ K7AR; 160-6m; QSL via W7YAQ; QRV for CQWW DX CW
2024 Nov30	2024 Dec13	**St Martin**	**TO9W**	LoTW	TDDX 20240506	By K9EL K9NU W9MR W9AP; HF; CW SSB FT8 FT4 RTTY; QSL via W9ILY (B/d), direct w/ 2.5 USD

Also for your convenience, there is a direct link to NG3K on our website. Click on the NG3K DX Page.



	November 2024	
+	NCCC FT4 Sprint	0100Z-0130Z, Nov 1
+	Weekly RTTY Test	0145Z-0215Z, Nov 1
+	NCCC Sprint	0230Z-0300Z, Nov 1
+	Silent Key Memorial Contest	0600Z-0859Z, Nov 1
+	K1USN Slow Speed Test	2000Z-2100Z, Nov 1
+	IPARC Contest, CW	0600Z-1800Z, Nov 2
+	ARRL Sweepstakes Contest, CW	2100Z, Nov 2 to 0300Z, Nov 4
+	IPARC Contest, SSB	0600Z-1800Z, Nov 3
+	EANET Sprint	0800Z-1200Z, Nov 3
+	High Speed Club CW Contest	1400Z-1700Z, Nov 3
+	K1USN Slow Speed Test	0000Z-0100Z, Nov 4
+	ICWC Medium Speed Test	1300Z-1400Z, Nov 4
+	OK1WC Memorial	1630Z-1729Z, Nov 4
+	ICWC Medium Speed Test	1900Z-2000Z, Nov 4
+	RSGB 80m Autumn Series, Data	2000Z-2130Z, Nov 4
+	Worldwide Sideband Activity Contest	0100Z-0159Z, Nov 5
+	ARS Spartan Sprint	0100Z-0300Z, Nov 5
+	ICWC Medium Speed Test	0300Z-0400Z, Nov 5
+	QRP Fox Hunt	0200Z-0330Z, Nov 6
+	Phone Weekly Test	0230Z-0300Z, Nov 6
+	A1Club AWT	1200Z-1300Z, Nov 6
+	CWops Test	1300Z-1400Z, Nov 6
+	Mini-Test 40	1700Z-1759Z, Nov 6
+	VHF-UHF FT8 Activity Contest	1700Z-2100Z, Nov 6
+	Mini-Test 80	1800Z-1859Z, Nov 6
+	CWops Test	1900Z-2000Z, Nov 6
+	UKEICC 80m Contest	2000Z-2100Z, Nov 6
+	Walk for the Bacon QRP Contest	0000Z-0100Z, Nov 7 and 0200Z-0300Z, Nov 8
+	CWops Test	0300Z-0400Z, Nov 7
+	CWops Test	0700Z-0800Z, Nov 7
+	NRAU 10m Activity Contest	1800Z-1900Z, Nov 7 (CW) and 1900Z-2000Z, Nov 7 (SSB) and 2000Z-2100Z, Nov 7 (FM) and 2100Z-2200Z, Nov 7 (Dig)
+	SKCC Sprint Europe	2000Z-2200Z, Nov 7
+	NCCC FT4 Sprint	0100Z-0130Z, Nov 8
+	Weekly RTTY Test	0145Z-0215Z, Nov 8
+	QRP Fox Hunt	0200Z-0330Z, Nov 8
+	NCCC Sprint	0230Z-0300Z, Nov 8
+	K1USN Slow Speed Test	2000Z-2100Z, Nov 8
+	FISTS Saturday Sprint	0000Z-2359Z, Nov 9
+	WAE DX Contest, RTTY	0000Z, Nov 9 to 2359Z, Nov 10
+	PODXS 070 Club Triple Play Low Band Sprint	0000Z, Nov 9 to 2359Z, Nov 11
+	10-10 Int. Fall Contest, Digital	0001Z, Nov 9 to 2359Z, Nov 10
+	JIDX Phone Contest	0700Z, Nov 9 to 1300Z, Nov 10
+	SKCC Weekend Sprintathon	1200Z, Nov 9 to 2400Z, Nov 10
+	OK/OM DX Contest, CW	1200Z, Nov 9 to 1200Z, Nov 10
+	CQ-WE Contest	1900Z-2300Z, Nov 9 (CW/Digital) and 0100Z-0500Z, Nov 10 (Phone) and 1900Z-2300Z, Nov 10 (Phone) and 0100Z-0500Z, Nov 11 (CW/Digital)
+	AWA Bruce Kelley 1929 QSO Party	2300Z, Nov 9 to 0300Z, Nov 11 and 2300Z, Nov 16 to 0300Z, Nov 18
+	North American SSB Sprint Contest	0000Z-0400Z, Nov 10
+	FIRAC HF Contest	0700Z to 1700Z, Nov 10
+	K1USN Slow Speed Test	0000Z-0100Z, Nov 11
+	4 States QRP Group Second Sunday Sprint	0100Z-0300Z, Nov 11
+	ICWC Medium Speed Test	1300Z-1400Z, Nov 11
+	OK1WC Memorial	1630Z-1729Z, Nov 11
+	ICWC Medium Speed Test	1900Z-2000Z, Nov 11
+	Worldwide Sideband Activity Contest	0100Z-0159Z, Nov 12
+	ICWC Medium Speed Test	0300Z-0400Z, Nov 12
+	DARC FT4 Contest	1900Z-2000Z, Nov 12
+	QRP Fox Hunt	0200Z-0330Z, Nov 13
+	Phone Weekly Test	0230Z-0300Z, Nov 13
+	A1Club AWT	1200Z-1300Z, Nov 13
+	CWops Test	1300Z-1400Z, Nov 13
+	Mini-Test 40	1700Z-1759Z, Nov 13
+	VHF-UHF FT8 Activity Contest	1700Z-2100Z, Nov 13
+	Mini-Test 80	1800Z-1859Z, Nov 13
+	CWops Test	1900Z-2000Z, Nov 13
+	RSGB 80m Autumn Series, SSB	2000Z-2130Z, Nov 13

November 2024 Contest Calendar - Continued on page 58

November 2024 Contest Calendar - WA7BNM Contest Calendar : www.contestcalendar.com

November 2024 Contest Calendar - Continued from page 57

+	CWops Test	0300Z-0400Z, Nov 14
+	CWops Test	0700Z-0800Z, Nov 14
+	NCCC FT4 Sprint	0100Z-0130Z, Nov 15
+	Weekly RTTY Test	0145Z-0215Z, Nov 15
+	QRP Fox Hunt	0200Z-0330Z, Nov 15
+	NCCC Sprint	0230Z-0300Z, Nov 15
+	K1USN Slow Speed Test	2000Z-2100Z, Nov 15
+	ARRL EME Contest	0000Z, Nov 16 to 2359Z, Nov 17
+	LZ DX Contest	1200Z, Nov 16 to 1200Z, Nov 17
+	All Austrian 160-Meter Contest	1600Z-2359Z, Nov 16
+	REF 160-Meter Contest	1700Z-2400Z, Nov 16
+	South American Integration Contest CW	1800Z, Nov 16 to 2100Z, Nov 17
+	RSGB 1.8 MHz Contest	1900Z-2300Z, Nov 16
+	Feld Hell Sprint	1900Z-2059Z, Nov 16
+	ARRL Sweepstakes Contest, SSB	2100Z, Nov 16 to 0300Z, Nov 18
+	FISTS Sunday Sprint	0000Z-2359Z, Nov 17
+	Homebrew and Oldtime Equipment Party	1300-1500Z, Nov 17 (40m) and 1500-1700Z, Nov 17 (80m)
+	Run for the Bacon QRP Contest	2300Z, Nov 17 to 0100Z, Nov 18
+	K1USN Slow Speed Test	0000Z-0100Z, Nov 18
+	ICWC Medium Speed Test	1300Z-1400Z, Nov 18
+	OK1WC Memorial	1630Z-1729Z, Nov 18
+	ICWC Medium Speed Test	1900Z-2000Z, Nov 18
+	RSGB FT4 Contest	2000Z-2130Z, Nov 18
+	Worldwide Sideband Activity Contest	0100Z-0159Z, Nov 19
+	ICWC Medium Speed Test	0300Z-0400Z, Nov 19
+	QRP Fox Hunt	0200Z-0330Z, Nov 20
+	Phone Weekly Test	0230Z-0300Z, Nov 20
+	A1Club AWT	1200Z-1300Z, Nov 20
+	CWops Test	1300Z-1400Z, Nov 20
+	Mini-Test 40	1700Z-1759Z, Nov 20
+	VHF-UHF FT8 Activity Contest	1700Z-2100Z, Nov 20
+	Mini-Test 80	1800Z-1859Z, Nov 20
+	CWops Test	1900Z-2000Z, Nov 20
+	Walk for the Bacon QRP Contest	0000Z-0100Z, Nov 21 and 0200Z-0300Z, Nov 22
+	NAQCC CW Sprint	0130Z-0330Z, Nov 21
+	CWops Test	0300Z-0400Z, Nov 21
+	CWops Test	0700Z-0800Z, Nov 21
+	NTC QSO Party	1900Z-2000Z, Nov 21
+	NCCC FT4 Sprint	0100Z-0130Z, Nov 22
+	Weekly RTTY Test	0145Z-0215Z, Nov 22
+	QRP Fox Hunt	0200Z-0330Z, Nov 22
+	NCCC Sprint	0230Z-0300Z, Nov 22
+	K1USN Slow Speed Test	2000Z-2100Z, Nov 22
+	CQ Worldwide DX Contest, CW	0000Z, Nov 23 to 2400Z, Nov 24
+	K1USN Slow Speed Test	0000Z-0100Z, Nov 25
+	QCX Challenge	1300Z-1400Z, Nov 25
+	ICWC Medium Speed Test	1300Z-1400Z, Nov 25
+	OK1WC Memorial	1630Z-1729Z, Nov 25
+	ICWC Medium Speed Test	1900Z-2000Z, Nov 25
+	QCX Challenge	1900Z-2000Z, Nov 25
+	Worldwide Sideband Activity Contest	0100Z-0159Z, Nov 26
+	ICWC Medium Speed Test	0300Z-0400Z, Nov 26
+	QCX Challenge	0300Z-0400Z, Nov 26
+	SKCC Sprint	0000Z-0200Z, Nov 27
+	QRP Fox Hunt	0200Z-0330Z, Nov 27
+	Phone Weekly Test	0230Z-0300Z, Nov 27
+	A1Club AWT	1200Z-1300Z, Nov 27
+	CWops Test	1300Z-1400Z, Nov 27
+	Mini-Test 40	1700Z-1759Z, Nov 27
+	Mini-Test 80	1800Z-1859Z, Nov 27
+	CWops Test	1900Z-2000Z, Nov 27
+	UKEICC 80m Contest	2000Z-2100Z, Nov 27
+	CWops Test	0300Z-0400Z, Nov 28
+	CWops Test	0700Z-0800Z, Nov 28
+	RSGB 80m Autumn Series, CW	2000Z-2130Z, Nov 28
+	NCCC FT4 Sprint	0100Z-0130Z, Nov 29
+	Weekly RTTY Test	0145Z-0215Z, Nov 29
+	QRP Fox Hunt	0200Z-0330Z, Nov 29
+	NCCC Sprint	0230Z-0300Z, Nov 29
+	K1USN Slow Speed Test	2000Z-2100Z, Nov 29
+	Ham Spirit Contest	0800Z, Nov 30 to 0759Z, Dec 1

2024 Club Committees

Standing Committees	Committee Chairs
Budget	**John O’Connell, K2QA**
Constitution & By-Laws	**Ron Block, NR2B**
Education	**Chris Prioli, AD2CS**
Field Day	**Tony Starr, K3TS**
Hamfest	**Sheldon Parker, K2MEN and Bill Price, NJ2S**
Health, Welfare, & Silent Keys	**Bill Price, NJ2S**
Hospitality	**Jeff Garth, WB2ZBN**
Membership	**Chris Prioli, AD2CS**
Membership Badges	**Chris Prioli, AD2CS**
Nominations	**Jon Pearce, WB2MNF**
Publicity	**Mike Resnick, N2WOQ**
Repeaters	***Open Chair***
W2MMD Clubhouse Site	**Al Arrison, KB2AYU**

Activity Committees	Committee Chairs
Awards & Certificates	**GCARC Board of Directors**
Club Photographer	**Phil Nunzio, WA3RGY**
Club Publications & Historian	**Jeff Garth, WB2ZBN**
Contests	**Tony Starr, K3TS**
GCARC Foxhunts	**Jim Wright, N2GXJ**
GC-ARES Emergency Coordinator	**Bob Keogh, KD2NEC**
Holiday Dinner Party	**Frank Romeo, N3PUU & Kathy Romeo**
License Testing/VEC Liaison	**Gary Reed, N2QEE**
Membership Roster Database	**Jeff Garth, WB2ZBN**
Programs : General Membership Meetings	**Ron Block, NR2B**
Radio Nets	***Open Chair***
Technical (Tech Saturday, TechNets)	**Jon Pearce, WB2MNF**
W2MMD License Trustee	**Darrell Neron, AB2E**
W2MMD Special Event Station	**Mark Gottlieb, KK2L**

GCARC <*at*> Mailman <*dot*> QTH <*dot*> Net e-mail reflector guidelines

1. **No attachments** (e.g. pictures, files) are allowed on the reflector.
2. If you have Club-related pictures that you would like to share, you can send them to the webmaster, he will put them on the website and will send out a general e-mail to all the members.
3. Otherwise, the pictures will have to be sent to the members’ addresses.
4. URLs/Hyperlinks are acceptable on the reflector.
5. Do not send any messages with e-mail addresses in the **BCC** (**Blind Carbon Copy**) field. The message will be rejected. Use only the **To:** or **CC:** fields.
6. Members are subscribed to the reflector using the member's e-mail address from the roster database. You must use that address when sending an e-mail via the reflector.
7. If you use another address on the reflector, the message will get rejected or "*bounced*", because the reflector does not recognize that address. Whenever a message sent to reflector is rejected or *"bounced"* for various reasons, the administrator has to log-in to the Mailman.QTH website and approve the message.

The W2MMD Repeaters

2 Meter Repeater
Output : 147.180 MHz
Input : 147.780 MHz
Offset : +600 kHz - PL : 131.8 Hz
(Conventional FM plus C4FM Capability)
EchoLink : W2MMD-R

70 cm Repeater
Output : 442.100 MHz
Input : 447.100 MHz
Offset : +5 MHz - PL : 131.8 Hz
(Conventional FM plus C4FM Capability)

The above repeaters are both
located in Pitman, NJ
GPS : 39.728481°, -75.131088°

1.25 Meter Repeater
Output : 224.660 MHz
Input : 223.060 MHz
Offset : -1.6 MHz - PL : 131.8 Hz
Location : Sewell, NJ
GPS : 39.746738°, -75.077094°

SKYWARN™ Net
Sunday @ 1930 : 147.180 MHz Repeater

Gloucester County ARES Net
Sunday @ 2000 : 147.180 MHz Repeater

GCARC TechNet ZOOM Forum
Available Every Monday @ 1930 Hours
Join ZOOM Meeting Link :
https://bit.ly/3K8bWwj

Tuesday AfterNoon 2M Net @ 1200 Hours

Tuesday & Thursday 10 Meter Net @ 1930 Hours
28.465 MHz or 28.475 MHz

Monday & Thursday Night 40M Net
1930 Hours
7.225 MHz (+/- 5 or 10 kHz)

Thursday 2M Net @ 2000 Hours

Meeting Calendar

General Membership Meeting
Wednesday, November 6, 2024
1900 Hours
Pfeiffer Community Center
Simulcast Live on ZOOM
Meeting ID : 943 0211 9674
Passcode : 843147
Join ZOOM Meeting Link :
https://bit.ly/44P4HCU

Board of Directors Meeting
Wednesday, November 20, 2024
1900 Hours
W2MMD Clubhouse

"There's More To Ham Radio Than
You Can Possibly Do!"
- K3TS

"The big thing about being in a club and
being a "Ham" is to help each other
when there is a need "
- W2SEF

*** Badges ***

Need a new or replacement badge
Contact "*The Badge Man*"

Chris Prioli, AD2CS
chris@ad2cs.com

Question Pool Answers : E1E01:A; E1E02:C; E1E03:C; E1E04:D; E1E05:B; E1E06:C; E1E07:B; E1E08:C;
E1E09:A; E1E10:C; E1E11:B

73 Gloucester County Amateur Radio Club - P. O. Box 370 - Pitman, NJ 08071 Ω